

**ARIZONA DEPARTMENT OF TRANSPORTATION
ENGINEERING CONSULTANTS SECTION
STATEMENT OF QUALIFICATIONS PACKAGE
FOR CONTRACT NO. 09-15
Full Service Construction Administration**

**I-17 - SR74 to ANTHEM WAY
RECONSTRUCTION**

**I-17 - ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION**



OCTOBER 2008

**STATEMENT OF QUALIFICATIONS PACKAGE
FOR**

**TRACS No. 017 MA224 H6881 01C
I-17: SR74 to ANTHEM WAY
RECONSTRUCTION**

**TRACS No. 017 MA229 H7604 01C
I-17: ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION**

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SECTION I
PUBLIC ADVERTISEMENT

FOR PUBLICATION October 1, 2008 and October 8, 2008
IN THE TRIBUNE NEWSPAPERS.
(Mesa Tribune, Chandler Arizonan & Tempe Daily News)

ARIZONA DEPARTMENT OF TRANSPORTATION
ENGINEERING CONSULTANTS SECTION

PUBLIC NOTICE FOR CONSULTANTS INTERESTED IN PROVIDING

FULL SERVICE CONSTRUCTION ADMINISTRATION
in Maricopa County

ECS CONTRACT NO. 09-15

TRACS No. 017 MA224 H688101C
I-17: SR74 to ANTHEM WAY
RECONSTRUCTION

and

TRACS No. 017 MA229 H760401C
I-17: ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION

Statements Due: October 22, 2008

The **ARIZONA DEPARTMENT OF TRANSPORTATION** is accepting Statements of Qualifications from firms to provide Full Service construction administration.

Statements of Qualifications will be received until **4:00 p.m.** Arizona Time on the above referenced date at ADOT Engineering Consultants Section, 205 South 17th Avenue, Room 293E, Mail Drop 616E, Phoenix, Arizona 85007. **No Statements will be accepted after the time specified.**

A Pre-Submittal Conference has been scheduled by the Project Manager for October 7, 2008 at 1:00 PM in the Auditorium at 206 S. 17th Avenue, Phoenix, Arizona, 85007. All questions **to the Project Manager** must be addressed at this time. All questions must be addressed at this time. Following the Pre-Submittal meeting, no further contact regarding this project will be allowed with **ANY** ADOT personnel except for those in Engineering Consultants Section. "Persons with a disability may request a reasonable accommodation such as a sign language interpreter, by contacting Emily Salinas at (602) 712-7770. Requests for accommodations must be made 48 hours in advance of the event, to allow time to arrange the accommodation."

For further information contact ADOT Engineering Consultant Section, (602) 712-7525 or www.azdot.gov/Highways/ECS/. Statement of Qualification packages for Contract 09-015 are available for pickup at the ADOT Engineering Building, 205 South 17th Avenue, Room 293E, Phoenix, Arizona 85007.

SECTION II
INFORMATION COPY TO CONSULTANTS

ARIZONA DEPARTMENT OF TRANSPORTATION
ENGINEERING CONSULTANTS SECTION

INFORMATION COPY TO CONSULTANTS

REQUEST FOR STATEMENTS OF QUALIFICATION FOR
CONSULTANTS INTERESTED IN PROVIDING
FULL SERVICE CONSTRUCTION ADMINISTRATION
in Maricopa County

ECS CONTRACT NO. 09-15

TRACS No. 017 MA224 H6881 01C
I-17: SR74 to ANTHEM WAY
RECONSTRUCTION

and
TRACS No. 017 MA229 H7604 01C
I-17: ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION

Statements Due: October 22, 2008

Statements of Qualifications expressing interest in the project will be received until 4:00 P.M. (Arizona Time) on the date shown above, at the office of Engineering Consultants Section, 205 South 17th Avenue, Room 293E, Mail Drop 616E, Phoenix, Arizona 85007. NO Statements will be accepted after the time specified.

Statements will be accepted from any firm or corporation who is properly registered with the Arizona Board of Technical Registration and who has a principal or officer responsible for this contract that is properly registered with the Arizona Board of Technical Registration at the time the Statements of Qualifications are due.

Firms selected for further consideration will participate in an interview as part of the selection process.

The selected consultant will provide Full Service construction administration of a highway construction project in the State of Arizona.

The consultant may be required to perform services including, but not limited to: construction administration, project supervision, construction inspection, materials control and acceptance testing, project office documentation. Technicians will be classified into five (5) groups; Construction Technician I, II, III IV, and V. Duties and responsibilities will be in accordance with such classifications identified in the Scope of Work.

Effective the date of the public advertisement of this contract, no further contact is allowed with any ADOT personnel concerning this project except for the Pre-submittal meeting and questions directed to the assigned Contract Specialist. This restriction is in effect until selection has been announced.

A Pre-Submittal Conference has been scheduled by the Project Manager for Friday, October 7, 2008 at 1:00 PM in ADOT Auditorium, 206 S. 17th Ave., Phoenix, Arizona, 85007. You must have an ID to sign in at the front desk. Persons with a disability may request a reasonable accommodation such as a sign language interpreter, by contacting Emily Salinas at (602) 712-7770. Requests for accommodations must be made 48 hours in advance of the event, to allow time to arrange the accommodation.

Any questions of an administrative or contractual nature that were not addressed at the Pre-Submittal meeting must be submitted in writing and directed to the attention of Emily Salinas at the address below.

Emily Salinas, Contract Specialist
Engineering Consultants Section (ECS)
205 S. 17th Avenue, Room 293E, Mail Drop 616E
Phoenix, AZ 85007
Phone 602-712-7770
FAX 602-712-7424

Questions will be received until 4:00 PM on October 16, 2008. A fax is also acceptable. No further questions will be accepted after the time specified.

All consultants will be notified of the consultant's request for information and the Department's response to the question. Information will be posted on the ECS Website as well as faxed to those firms that have registered for project updates.

Any violation of the above contact restrictions may be grounds for rejection of the consultants SOQ.

The Engineering Consultants Section Statement of Qualifications format for Contract No. 09-15 shall be followed when expressing interest in these projects. The Statement of Qualifications package, or information regarding same, may be obtained from the address shown above, telephone (602) 712-7525. **Statements of Qualifications not following the correct format will be rejected.**

In order to qualify for selection, a firm must have on file with the Department a current "Prequalification Statement" or submit same with the Statement of Qualifications. Prequalification Statement forms may be obtained from the address shown above, telephone (602) 712-7525.

The Department may select one (1) firm from among those submitting Statements of Qualifications for further consideration. Previous experience in construction administration services will be a factor in the selection.

The selected consultants and their sub-consultants will be required to submit the Consultant Audit Questionnaire and comply with the Advance Agreement Checklist as detailed in SECTION X of the SOQ Package.

All material submitted in accordance with this solicitation becomes the property of the State of Arizona.

Lobbying certification/disclosure certification statement will be required in the introductory letter from those submitting Statements of Qualifications.

The right is reserved by the Department to reject any and all Statements of Qualification.

Professional Liability Insurance will be required.

The Boiler Plates for all Engineering Consultant Section Contracts are not negotiable.

Partnerships (joint-ventures) will not be considered.

Reviewing the successful Proposal(s) would be allowed but copying is not permitted.

Inclusion of work hour and/or plan sheet estimates in the SOQ will not be allowed.

SECTION III

CONSULTANT

CONSTRUCTION ADMINISTRATION GUIDELINES

ENGINEERING CONSULTANTS SECTION

GUIDELINES FOR: CONSULTANT CONSTRUCTION ADMINISTRATION

The following cost guidelines will be used when negotiating Construction Administration projects for the Arizona Department of Transportation.

1. A fair and reasonable overhead will be applied to all Construction Administration contracts.
2. Relocation allowance will not be allowed. However, a member of the Team who has a unique specialty may be allowed travel and per diem allowances if deemed necessary and pre-approved by the project manager.
3. Other Direct Expenses must be project specific. Otherwise, it must be billed through overhead. Allowable expenses are:
 - Long Term Per Diem (\$39/day includes meals & lodging)/ per ADOT POLICY
 - Mileage -- privately owned vehicles @ \$.445/mile/ per ADOT POLICY
 - Leased vehicles plus cost for fuel, scheduled maintenance and insurance.
 - Cell phone packages --- negotiated on a project per project basis
 - Computers -- the Department will supply.
4. Vehicle Policy
 - The maximum allowable for any leased vehicle is \$600 per month. Consultants should lease two wheel drive trucks (full and/or compact) for all construction administration projects. Authorization of four wheel drive vehicles will be the exception, such as for very rough terrain and will be approved by the Deputy State Engineer for Operations or Valley Transportation Group.
 - Sports Utility Vehicles are not authorized.
 - No vehicles leased for a specific project will be used for personal or other use.

SECTION IV

STATEMENT OF QUALIFICATIONS FORMAT INSTRUCTIONS

**ENGINEERING CONSULTANTS SECTION
STATEMENT OF QUALIFICATIONS FORMAT INSTRUCTIONS
CONTRACT NO. 09-15**

Provided for your use is the format for submission of a STATEMENT OF QUALIFICATION.

1. SIX (6) COPIES OF THE STATEMENT OF QUALIFICATION ARE REQUIRED BY ADOT.

2. There is a TOTAL PAGE LIMIT of (14) pages. The proposal may include clear report covers, covers, dividers, table of contents, tables, figures, maps, etc., but these must fit within the 14 page limit. A page shall be 8 1/2 X 11 inches, blank, or printed on one side only. Fold out pages are not allowable.

3. The SOQ proposal must follow the format outlined below:

| | <u>FORMAT CONTENT</u> | <u>MAXIMUM POINTS</u> | <u>TOTAL NUMBER OF PAGES</u> |
|--------|--|---------------------------|----------------------------------|
| | FRONT COVER (Optional, but if included will count as a page) | | |
| PART A | INTRODUCTORY LETTER | | |
| PART B | EVALUATION CRITERIA May include information to support Criteria. | | |
| | 1. Project Understanding & Approach | 25 | |
| | 2. Project Team | 40 | |
| | 3. Firms Capability | 15 | |
| | 4. Oral Interview | 20 | |
| PART C | CONSULTANT FIRM INFORMATION PAGE | | |
| | BACK COVER (Optional, but if included will count as a page) | | |
| | | <u>TOTAL POINTS</u> | <u>TOTAL PAGES</u> |
| | TOTAL POINTS | 100 | 14 |

4. Any amendments issued on the SOQ and included in the SOQ, as required, will NOT be counted as pages.

5. Submissions failing to follow all instructions outlined above will be rejected and the Consultant notified in writing of the reason(s) for rejection.

ENGINEERING CONSULTANTS SECTION
Statement of Qualifications
Format and Evaluation Criteria
for
Contract No. 09-15
CONSTRUCTION ADMINISTRATION PROJECTS.

The following describes more specifically, the content of each part.

PART A. INTRODUCTORY LETTER

The introductory letter should be addressed to:

Arizona Department of Transportation
Engineering Consultant Section
205 South 17th Avenue
Room 293E, Mail Drop 616E
Phoenix, Arizona 85007

The introductory letter should contain the following items:

- An expression of the firm's interest in being selected for the project.
- A statement that the firm is pre-qualified with ADOT, or that the necessary pre-qualification information is being submitted with the proposal.
- A statement confirming the commitment of the key personnel identified in the submittal to the extent necessary to meet ADOT's quality and schedule expectations.
- Provide name and Professional Engineers registration number of the principal or officer responsible for this contract that is properly registered with the Arizona Board of Technical Registration at the time the Statements of Qualifications are due.
- A summary of key points regarding the firm's qualifications.
- A statement that the Consultant certifies, by signing and submitting this proposal to the best of his or her knowledge and belief, that no Federally appropriated funds have been paid or will be paid, by or on behalf of the undersigned for the purpose of lobbying (Refer to Section V).

PART B. EVALUATION CRITERIA

The information that should be included in the discussion of qualifications is outlined here.

1. Project Understanding and Approach
 - a. Discuss generally the tasks involved in this project. Identify any special issues or problems that are likely to be encountered. Demonstrate clearly and concisely your understanding of the technical and institutional elements with which the consultant must deal.
 - b. Outline your proposed approach for dealing with the tasks and issues of this project.
 - c. Outline your approach to schedule staff for oversight on inspection, testing and project administration.

2. Project Team

Identify your proposed project team and its collective qualifications for this particular project. In particular, discuss the following:

- a. Resident Engineer. State who will actively manage this project. Identify any projects that person will be involved with. List recent similar projects for which this person has performed a comparable function. Discuss relevant experience, professional registrations, education and other components of qualifications applicable to this project.
- b. Other Key Personnel. Identify other key members listed in the SOQ of the project team including sub-consultants that provide special expertise or will perform key tasks. Describe their anticipated roles. Discuss their relevant experience, registration, education and other elements of qualification applicable to this project.
- c. Identify all key personnel's time dedicated to this project, the availability of the key personnel as well as estimated staffing specific to this project. Also, please identify personnel's classifications and grade (be specific) and time with Firm. Lastly, submit individual resume's for key personnel. The resumes will not be included in the page count.

3. Firm Capability

- a. Discuss recent relevant experience of the firm. Projects listed should be similar in nature to the current project and to the extent possible involve team members proposed for this project.
- b. Discuss quantitatively how this project would impact the current and anticipated workload of the office, which will perform this work. If "staffing up" will be necessary, discuss which areas and how that would be accomplished. The Firm is to provide a list of all their contract administration projects breaking down the status of completion and estimated date for final acceptance.
- c. Describe your internal procedures for developing, monitoring and maintaining project schedules and budgets.
- d. Describe your internal quality control procedures.
- e. Describe any notable expertise, increase in capacity or other special capabilities of your sub-consultants that are critical to your proposal.
- f. Describe how your quality program would enhance the development of this project.
- g. Describe your internal procedures for providing partnering education and development.
- h. Identify the key personnel, their current and upcoming work they are committed to.

4. Oral Interview

- a. The Department will select 3 to 5 firms for further consideration based on their SOQ evaluation. These firms will be asked to participate in an oral interview process.

The Consultant's key personnel (maximum of five) shall be present the oral interview to provide an overview of its plan and approach to the project. Details of its SOQ are to be explained, and the Consultant should be prepared to answer the Selection Team's questions that will be in reference to the Firm's SOQ submittal. Presentation and Answers shall not exceed 90 minutes.

- b. The following structure will be used:
 - 45 minutes Introduction and Presentation by the Consultant Firm
 - 35 minutes Question Period by Selection Team
 - 10 minutes Wrap-up by Firm
- c. Each Consultants Presentation Team will be limited to a maximum of three boards or charts of a maximum size of 3 feet by 5 feet each. PowerPoint presentations will be allowed.
- d. The firm shall not distribute handouts or leave any materials with the Selection Team. The Selection Team members will not accept food or drink from the Consultants.
- e. Each firm will be responsible for providing its own audio/visual equipment for the presentation.
- f. Firms will be allowed into the interview room 30 minutes prior in order to set up for the interview.

ENGINEERING CONSULTANTS SECTION
Proposal Evaluation Form
for
Construction Administration Projects

Questions, which the review panel will generally be seeking to answer in their evaluation, are listed here. The maximum points available for each category are indicated, though the relative weighting of items within each category is up to the discretion of the individual reviewers.

1. PROJECT UNDERSTANDING AND APPROACH (Maximum 25 points)

- Does the consultant understand the nature and scope of the project and the major tasks and issues that will need to be addressed?
- Has the consultant correctly identified any special problems that are likely to be encountered?
- Does the consultant appreciate the interrelation and relative importance of the various project issues?
- Has the consultant's understanding of the project been expressed clearly and concisely?
- Has the consultant proposed logical approaches for dealing with the project tasks and issues?
- Does the schedule incorporate all the major tasks and events? Does it reflect the interrelationship of important project elements and events? Is the proposed timing realistic?
- Does the consultant understand its responsibilities for the project?

2. PROJECT TEAM (Maximum 40 points)

- What is the level of ability and experience of the proposed Resident Engineer? What is the person's record of accomplishing similar projects in the past in terms of (1) quality of work, (2) meeting schedules, (3) responsiveness to special needs and concerns of the client? Is this individual familiar with specific ADOT standards and procedures?
- Does the person identified as ultimately responsible for the consultant's performance have the authority necessary to commit firm resources, and to act on behalf of the consultant regarding contractual matters and disputes? What is this person's experience and record of performance on past projects of similar type and magnitude? Has this individual been responsive to similar clients in the past?
- Do other key members of the project team (including subconsultants) provide the range and level of expertise necessary to deal with the scope of this project? Are these individuals familiar with specific ADOT standards and procedures?

3. FIRM CAPABILITY (Maximum 15 points)

- What level of experience relevant to this project does the consultant have? Are the firm's employees with the relevant experience participating in this project? Is the consultant familiar with ADOT standards and procedures? Has the firm shown a particular commitment to this type of work?

- Has the consultant provided quantitative data indicating that qualified personnel will be available for this project? Does the consultant realistically have the ability to add qualified staff if needed for this project?
- Is the consultant's approach for developing and maintaining the project budget and schedule sound?
- Are the consultant's construction administration procedures suitable?
- If one or more subconsultants are critical to the consultant's proposal, do these firms have the technical expertise, available personnel and record of performance appropriate for their anticipated roles?

4. ORAL INTERVIEW (Maximum 20 Points)

- Questions to be presented at the time of the Interview.

I.

CONTRACT NO. _____

**STATEMENT OF QUALIFICATIONS/SELECTION
PANEL COMMENT FORM**

FIRM NAME _____ # _____

PANEL MEMBER _____ # _____

1. PROJECT UNDERSTANDING AND APPROACH

What did you like about the firm's understanding and approach?

What did you dislike about the firm's understanding and approach?

What did you think about the way the firm handled special problems and/or special situations?

What did you think about the schedule?

What parts of the understanding and approach did you think were well done?

What suggestions would you make to the firm to improve this section for the next time?

SCORE (25 Maximum)

I. PANEL COMMENT FORM
PAGE TWO

CONTRACT NO. _____

FIRM NAME _____ **#** _____

PANEL MEMBER _____ **#** _____

2. PROJECT TEAM

Team Strengths:

Team Weaknesses:

How are the team member's qualifications geared to this specific project?

SCORE (40 Maximum) _____

3. FIRM'S CAPABILITIES

Firm's strong areas as related to this project:

Firm's weak areas as related to this project:

I. PANEL COMMENT FORM
Page Three

CONTRACT NO. _____

FIRM NAME _____ # _____

PANEL MEMBER _____ # _____

3. FIRM'S CAPABILITIES, CONTINUED

How did the firm fit the subconsultant's qualifications/duties into overall picture?

SCORE (15 Maximum) _____

(SCORES ARE TO BE ENTERED AND TOTALED ON SCORE SHEET)

=====

OTHER:

Any comments on the format and presentation of the SOQ?

Any other comments or suggestions?

ORAL INTERVIEW
PANEL RANKING FORM

FIRM NAME _____

PANEL MEMBER _____

1. How did the consultant team respond to the panel questions? (Were their answers accurate? Lacking?...etc.)

SCORE (10 MAXIMUM) _____

2. What impressed you about the interview? (What did they do well? What could they have done better?)

SCORE (10 MAXIMUM) _____

TOTAL SCORE (20 Maximum) _____

SECTION V

CONSULTANT FIRM INFORMATION PAGE

PART C - CONSULTANT FIRM INFORMATION PAGE

CONTRACT NO.: _____

CONTACT PERSON: _____

E-MAIL ADDRESS: _____

CONSULTANT FIRM: _____

ADDRESS: _____

CITY, STATE ZIP: _____

TELEPHONE: _____

FAX NUMBER: _____

ADOT CERTIFIED DBE FIRM? _____

AFFIRMATIVE ACTION ON FILE WITH ADOT? _____

| SUBCONSULTANT(S) | TYPE OF WORK | ADOT CERTIFIED DBE FIRM |
|------------------|--------------|----------------------------|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |
| _____ | _____ | _____ |

NOTE: The Consultant Firm Information Page must be a separate full page and is included in the total page count. This page is not evaluated by the Selection Panel, but is used by Engineering Consultants Section for administrative purposes.

SECTION VI
LOBBYING CERTIFICATION

Lobbying Certification

The Consultant certifies, by signing and submitting this proposal (see statement in "Introductory Letter"), to the best of his or her knowledge and belief, that:

- (1) No federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract grant, loan, or cooperative agreement.
- (2) If any funds other than Federally appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions. Copies of Form-LLL "Disclosure Form to Report Lobbying", are available at ADOT Engineering Consultants Section, 205 S. 17th Avenue, Mail Drop 616E, Room 293E, Phoenix, AZ 85007.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by Section 1352, Title 31, and U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The proposer also agrees, by submitting its proposal, that it shall require that the language of this certification be included in all subcontracts and lower tier subcontracts which exceed \$100,000 and that all such subcontracts and lower tier subcontractors shall certify and disclose accordingly.

The Department will keep the Consultants certification on file as part of their original proposals. The Consultant shall keep individual certifications from all subcontractors and lower tier subcontractors on file. Certifications shall be retained for 3 years following completion and acceptance of any given project.

Disclosure forms for the Prime Consultant and or their subcontractors and lower tier subcontractors shall be submitted to the Contract Manager at the date Statements of Qualifications are due, when said subcontracts exceed \$100,000. During the performance of the contract the Consultant and any affected subcontractors shall file revised disclosure forms at the end of each calendar year quarter in which events occur that materially affect the accuracy of any previously filed disclosure form. Disclosure forms will be submitted by the Contract Manager to the Federal Highway Administration for further processing.

SECTION VII

ADOT EMPLOYEE POST EMPLOYEE EMPLOYMENT RESTRICTIONS SUPPLEMENTAL SERVICES RESTRICTIONS



FIFE SYMINGTON
Governor

LARRY S. BONINE
Director

ARIZONA DEPARTMENT OF TRANSPORTATION

INTERMODAL TRANSPORTATION DIVISION
ENGINEERING CONSULTANTS SECTION
205 South 17th Avenue - Room 293E, Mail Drop 616E
Phoenix, Arizona 85007



THOMAS G. SCHMITT
State Engineer

March 7, 1996

Engineering Consultants Section

INFORMATION BULLETIN 96-04

TO: CONSULTANTS

FROM: ENGINEERING CONSULTANTS SECTION

SUBJECT: ADOT Employee Post Employment Restrictions

The purpose of this bulletin is to provide guidance to consultants in the employment of current or former ADOT employees to work on contracts administered by the Engineering Consultants Section. The following guidelines and policy are intended to avoid actual or perceived conflicts of interest. The reference to "current ADOT employee" applies to both full time employees and temporary employees.

1. A current ADOT employee cannot be employed by a consultant to work on active ADOT contracts.
2. A current ADOT employee cannot be included in a Statement Of Qualifications proposal for an ADOT consultant contract as an owner, an individual, or as a member of the consultants team. If an employee resigns to comply with this rule their last day of ADOT employment must be prior to the date that the proposals are due.
3. If a current or former ADOT employee is employed by a consultant which has an active ADOT contract for which the employee was a decision maker in the selection process or negotiated/approved billings or contract modifications, the employee is prohibited from working on these contracts (Policy and Implementation Memorandum 92-12).



Janet Napolitano
Governor

Victor M. Mendez
Director

Arizona Department of Transportation

Intermodal Transportation Division

206 South Seventeenth Avenue Phoenix, Arizona 85007-3213

Debra Brisk
Deputy Director

August 18, 2004

REVISED INFORMATION BULLETIN NO. 04-05

TO: ADOT Project Managers/Monitors, Resident Engineers
And Consultant Engineering Firms

FROM: Engineering Consultants Section

SUBJECT: CONFLICT OF INTEREST
SUPPLEMENTAL SERVICES RESTRICTIONS

The purpose of this bulletin is to provide guidance to firms supplying supplemental service employees to ADOT under contracts administered by the Engineering Consultants Section (ECS).

The following restrictions are intended to avoid actual or perceived conflicts of interest. The reference to "ADOT contract employee" applies to both full time and part time contract employees.

1. A current ADOT contract employee cannot be included in a Statement of Qualifications proposal for an ADOT consultant contract as a member of the consultant's team. Exceptions would be:
 - a. if the contract employee resigns to comply with this rule their last day of ADOT contract employment must be prior to the date that the proposals are due; or
 - b. if the employee's contract is in it's third year and within 4 months of the contract completion date; or
 - c. if the Department exercises it's option not to extend the existing contract.
2. If a current or former ADOT contract employee is employed by a consultant which has an active ADOT contract for which the contract employee was a decision maker (for example: involved in the final scope preparation, involved in the selection process or negotiated/approved billings or contract modifications), the employee is prohibited from working on these contracts.

As of this date, a copy of this information bulletin will be included in each ECS Statement of Qualifications package.

If a waiver is requested from the above restrictions, a statement must be submitted to ECS describing the nature of their involvement prior to proposal submittal or work assignment. Resolution of potential conflicts of interest will be determined by ECS in conjunction with the applicable Deputy State Engineer.

SECTION VIII

PROJECT SUMMARY REFERENCE MATERIAL AVAILABILITY

**REFERENCE MATERIAL
FOR
CONTRACT NO. 09-15**

Full Service Construction Administration

**I-17 - SR74 to ANTHEM WAY
RECONSTRUCTION**

**I-17 - ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION**

The following documents regarding this project will be available at the following location for the Consultant to review:

[Ftp://ftp.azdot.gov](ftp://ftp.azdot.gov)

Username: ECS
Password: Ecs_01

- 1.) **95% draft Special Provisions**
TRACS No. 017 MA224 H6881 01C
I-17: SR74 to ANTHEM WAY
RECONSTRUCTION

TRACS No. 017 MA229 H7604 01C
I-17: ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION
- 2.) **DETAILED ESTIMATE (Stage IV Design)**
I-17 SR 74 TO ANTHEM
017 MA 224 TRACS H6881 01C
- 3.) **DETAILED ESTIMATE (Stage IV Design)**
ANTHEM WAY TO NEW RIVER ROAD
017 MA 229 TRACS H7604 01C

SECTION IX
SCOPE OF WORK

STATE OF ARIZONA
DEPARTMENT OF TRANSPORTATION
HIGHWAY OPERATIONS GROUP
206 SOUTH 17th AVENUE
PHOENIX, ARIZONA 85007

FULL SERVICE CONSTRUCTION ADMINISTRATION

SCOPE OF WORK

09-15

October, 2008

**TRACS No. 017 MA224 H6881 01C
I-17: SR74 to ANTHEM WAY
RECONSTRUCTION**

**TRACS No. 017 MA229 H7604 01C
I-17: ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION**

APPROVED

**TRACS No. 017 MA224 H6881 01C
I-17: SR74 to ANTHEM WAY
RECONSTRUCTION**

**TRACS No. 017 MA229 H7604 01C
I-17: ANTHEM WAY to NEW RIVER ROAD
PAVEMENT PRESERVATION**

PROPOSED WORK:

Project 017 MA 224 H6881 01C widens the portion of the Phoenix-Cordes Junction Highway between MP 224.36 (SR74/Carefree Highway) and MP 229.17 (Anthem Way), for a distance of approximately 4.8 miles. The project is within the City of Phoenix and Maricopa County and includes median widening to provide an additional general purpose lane to existing I-17 northbound and southbound roadways.

The proposed work consists of widening the existing Deadman Wash structures, placing new asphaltic concrete pavement, constructing drainage features, removing and replacing pavement markings, permanently placing temporary concrete barrier and other related work.

Project 017 MA 229 H7604 01C removes and replaces existing AR-ACFC pavement on the portion of the Phoenix-Cordes Junction Highway between MP 229.17 (Anthem Way) and MP 232.79 (New River Road), for a distance of approximately 3.6 miles. The project is within the City of Phoenix and Maricopa County.

The proposed work consists of milling existing AR-ACFC, placing new AR-ACFC, placing a fog coat, removing and replacing pavement markings, and other related work.

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SCOPE OF WORK

The purpose of this contract is to provide consultant administrative services on a construction project for the Arizona Department of Transportation (ADOT) and to serve as an extension of the ADOT staff.

The CONSULTANT shall provide an on-site field office to include all office supplies, utilities, and communications for the life of the construction project or until the ADOT notifies the consultant otherwise.

The length of service for this contract shall be 350 calendar days plus additional days for pre-job and project finalization. The CONSULTANT will be given an advanced notice to proceed (if necessary) to allow for coordination meetings prior to actual commencement of work.

The construction administration effort on this project will be important and extensive.

DEFINITIONS

| | |
|--|---|
| ADOT | The Arizona Department of Transportation |
| PROJECT MONITOR-IN CHARGE a.k.a. PROJECT MONITOR | The official ADOT representative on the project who will be available throughout all phases of the construction project(s) assigned under this agreement and who shall assist the consultant in the administration of the contract. |
| CONSULTANT CONTRACT ADMINISTRATOR a.k.a. CCA | Contracted consultant administrative service that shall represent the ADOT and administer the construction contract in accordance with the Scope of Work, Contract Plans and Special Provisions, and the ADOT standards and specifications and manuals. |
| CONSULTANT STAFF | Qualified employees of the Consultant who shall serve as an extension to the ADOT in the performance of construction management and construction inspection, testing, office procedures, safety, partnering, documentation and all other duties required to successfully manage the projects under this contract. |

RESPONSIBILITIES

The CONSULTANT, as contract administrator, shall have the sole responsibility for communicating or relaying information and/or requests to the Contractor. Problems or questions concerning the contract or the Contractor shall be addressed to, and by, the CONSULTANT.

The CONSULTANT shall provide contract staff with cellular telephones and provide the ADOT with a current list of names and telephone numbers for essential personnel.

The CONSULTANT shall provide vehicular transportation for inspection staff working on this project.

The CONSULTANT for this contract shall be solely responsible for notifying their stakeholders of meetings:

- The Pre-Construction Conference as referenced in SECTION 108.03 of the ADOT 2000 Standard Specifications for Road and Bridge Construction and the current ADOT Construction Manual.
- **Partnering Workshop as referenced in the Partnering "Fine Tuned Processes", September 2003.**

The CONSULTANT providing construction administration services, and the Contractor performing construction on the assigned project, cannot have the same parent company or any corporate association. Both CONSULTANT and Contractor are required to adhere and comply with Labor compliance requirements and both shall allow the ADOT Field Reports section to monitor the contract.

To accomplish this, the CONSULTANT shall immediately provide the Field Reports section with the following information:

- Name of Resident Engineer
- Office Manager
- His/her E mail address(If applicable)
- Field office address
- Field office phone number

PARTNERING

The CONSULTANT shall have a thorough working knowledge and prior experience in the Partnering method of construction administration. The CONSULTANT and the staff shall maintain a good working relationship with the contractor throughout the length of the construction project. **Refer to SECTION 104.01 (a) and (b) of the Standard Specifications for Road and Bridge Construction, Edition 2008.**

The ADOT Partnering Section (602-712-7120) can provide the CONSULTANT with policies and references to use as a guide to PARTNERING. The following publications are excellent sources to foster and facilitate good partnering procedures.

- "Partnering, Fine Tuned Processes", dated September 2000; a memo titled,
- "Documentation of Public Purpose Associated with Partnering Workshops and the Simultaneous Provision of Food and Beverages to the Participants" dated December 30, 2003.
- "ITD Policy and Implementation Memorandum SUP 03-2 – Partnering Policy" dated December 30, 2003.

STAFFING REQUIREMENTS

The CONSULTANT shall provide a sufficient number of personnel to meet the requirements of this contract and to adjust approved changes made by the Contractor or by the ADOT to the Critical Path Method (C.M.P.) schedule.

CONSULTANT personnel assigned to the project shall have prior highway and construction experience and shall be knowledgeable in all areas of work covered by the Scope of Work in this contract and the construction project's Special Provisions and Highway Plans.

The Consultant's staff shall be available for review of office documentation procedures and for computer software training. The ADOT Consultant Contract Administration Office (602-712-7254) and Field Reports Office (602-712-7301) located at 206 South 17th Avenue, Phoenix, Arizona can provide training in office procedures.

The ADOT Information Technology Group (ITG) personnel are responsible for providing the Consultant staff with computer software training and support. Engineering Consultant Services (ECS) generates the Site License used to access the ADOT construction software as they process the CONSULTANT contract. The Consultant Contract Administrator is responsible for providing and monitoring paperwork that allows the CONSULTANT staff to access the ADOT FAST system. The Consultant can make inquiries about this process by calling the ITG Support Desk at 602-712-7249.

Employees of the CONSULTANT or the SUB-CONSULTANT'S who do not perform their work in a safe and knowledgeable manner, or who are intemperate or disorderly, shall be removed immediately from the project at the written request of the PROJECT MONITOR. Behavior of this type may restrict re-employment of the employee on this project or future State projects unless written approval is submitted by the ADOT.

ADOT has defined some positions under this consultant administration contract as "KEY PERSONNEL*". New personnel positions may be later identified, approved by ADOT and added to the contract. No changes shall be made without the written approval of the PROJECT MANAGER and CCA. Project staffing requirements shall be based upon the negotiated hours in the contract.

Consultant Classifications are as follows:

- Senior Resident Engineer (T3)

- Resident Engineer (T2)
- Registered Landscape Architect (T2)
- Registered Land Surveyor (T2)
- Archeologist
- Tech V (S9)
- Tech IV (S7)
- Tech III (S6)
- Tech II (S5)
- Tech I (S4)
- Engineer Worker (S1)

Major requirements included within the Classification guidelines are – See Below:

MAJOR STAFFING REQUIREMENTS INCLUDED WITHIN THE CLASSIFICATION GUIDELINES ARE:

- Arizona Technical Institute (ATI – Field and Lab) Certifications for Construction Techs. I, II, III, IV, and Tech V classifications as required per job tasks.
- American Concrete Institute (ACI – Field and Lab) Certifications for Construction Techs. I, II, III, IV, and Tech V classifications as required per job tasks.
- National Society of Professional Surveyors (NSPS – Survey) Certifications for Survey Techs. I, II, III, IV and V classifications as required per job tasks.
- International Municipal Signal Association (IMSA – Electrical) Certifications for Construction Techs. I, II, III, IV, and Tech V classifications as required per job tasks.
- Consultant Personnel (Supervisor – Field, Lab) must meet the requirements of Table - 2. (See Appendix ‘B’)
- Consultant Personnel (Technician – Field, Lab) must meet the requirement of Table – 3. (See Appendix ‘C’)
- Consultant and his technicians must possess a sound knowledge and experience of the Partnering Concept utilized presently in ADOT’s Construction Program.
- See Matrix’s (Appendix ‘D’) as a guide on requirements, experience and training to supplemental construction staff.
- College or university engineering course work.
- Certification for use of nuclear equipment to include successful completion of the nuclear gauging equipment manufacturer’s radiation safety and equipment operation course, the ADOT radiation safety course, or other courses with similar content and requirements that have been approved by the Arizona Radiation Regulatory Agency

The following positions have been identified as KEY POSITIONS in this contract:

- SR. RESIDENT ENGINEER
- PROJECT SUPERVISOR
- FIELD OFFICE SUPERVISOR
- MATERIALS LABORATORY SUPERVISOR

- **TRAFFIC CONTROL SPECIALIST**

Note: All personnel as defined above and as identified in the statement of qualifications need to be approved for the specific task they are listed to perform and shall not be replaced on the project without the PROJECT MONITOR'S and CCA's written approval.

In compliance with safety and emergency situations of this project please provide the PROJECT MONITOR telephone number(s) or other means of communication to contact the Resident Engineer and Traffic Control Specialist to provide immediate attention to traffic situations that may occur after hours, weekends and holidays.

SR. RESIDENT ENGINEER (T3)

The SR. RESIDENT ENGINEER proposed for work under this contract shall be registered as a Civil Engineer in the State of Arizona or an approved field.

Depending on project need the SR. RESIDENT ENGINEER and other appropriate key personnel identified by the PROJECT MONITOR shall be available to begin work within one week of the execution of this Agreement or as otherwise authorized by Consultant Contracts.

PROJECT SUPERVISOR (S9)

The PROJECT SUPERVISOR proposed for work under this contract shall be highly knowledgeable in analyzing, evaluating, researching, reading and interpreting a variety of technical engineering data that includes highway construction plans, field survey data and quality control documentation. This supervisor must have a minimum of 10 years current experience on similar work and plans. It is essential that the Project Supervisor possess skills in oral and written communications to fully perform this task. Communications will include interpersonal relations as applied to contacts with contractors, ADOT staff, and representatives of other governmental jurisdictions and in building partnerships. The Project Supervisor must also possess skills in organizing and prioritizing work assignments.

FIELD OFFICE MANAGER (S7)

The FIELD OFFICE MANAGER proposed for work under this contract must be knowledgeable in computer usage (Excel, Word, Outlook) and highly experienced in analyzing and evaluating a wide variety of highly technical engineering data, including construction plans, field survey, and quality control documentation. Knowledge required should include skills in interpreting and implementing the ADOT 2008 Standard Specifications for Road and Bridge Construction, ADOT policies, procedures, pay item documentation, Force Account documentation, certified payrolls, progress reporting and regulations, CPE, PEP; also skills in interpersonal relations, as applied to contacts with contractors, ADOT staff and representatives of other governmental jurisdictions. Minimum of 6 years current experience required **OR** possess a degree in Business / Project Administration or Education with an emphasis in Math or Science and completion of all training classes listed above.

MATERIALS LABORATORY SUPERVISOR (S7)

The MATERIALS LABORATORY SUPERVISOR proposed for work under these contract qualifications shall meet the requirements of (Appendix A, TABLE 2) of this document. Responsibilities shall include verification of all materials incorporated into the project such as certifications, testing, documentation (logging) and reporting of test results in a timely manner.

The CONSULTANT'S personnel shall be ATI and ACI certified and have on-site material sampling and testing experience. Technician qualifications will be in accordance with the requirements of (Appendix A, TABLE 3). Proof of technician certification shall be made available to the ADOT upon request. The CONSULTANT'S staff shall be experienced and proficient in ADOT'S software applications, such as FAST. This includes PEN, SATS, CPE, Contract Card and Price Adjustment.

Documentation forms for testing will be provided by (ADOT).

TRAFFIC CONTROL SPECIALIST (TCS) (S7)

The TRAFFIC CONTROL SPECIALIST (TCS) proposed for work under this contract shall have extensive knowledge and background in work zone traffic control procedures. The TCS shall be available and subject to on-call status 24 hours per day, seven (7) days a week to perform daytime, nighttime and weekend inspections and document information in accordance with (ADOT) requirements. Once the identity of the TRAFFIC CONTROL SPECIALIST(s) has been approved by the ADOT, no change shall be allowed unless a written request for personnel change is submitted and approved by the Project Monitor five (5) days prior to actual implementation.

The ADOT Traffic Control Manual for Highway Construction and Maintenance and the ADOT Standard Specifications for Road and Bridge Construction, 2008 Edition shall be used as reference and guidance.

The Traffic Control Specialist shall monitor the CONTRACTOR'S maintenance and protection of traffic to ensure compliance to the requirements of the contract.

The CONSULTANT shall provide a TRAFFIC CONTROL SPECIALIST other than the RESIDENT ENGINEER or as otherwise authorized by the PROJECT MONITOR.

Note: *CONSULTANT shall not make changes to KEY PERSONNEL or to the Statement of Qualification without the written approval of the PROJECT MANAGER.

MATERIALS TESTING

The Consultant's equipment shall include, but not necessarily be limited to, vehicles for transporting personnel and inspection/testing equipment and any other required devices used to determine the workmanship of the contractor and the quality and acceptability of roadway materials to be incorporated in the project construction.

Asphalt concrete mix designs will be in accordance with Section 406 through Section 417 of the ADOT 2008 Standard Specifications for Road and Bridge Construction. The CONTRACTOR will submit concrete mix designs, including any admixtures through the

CONSULTANT to the PROJECT MONITOR for their review. The Regional Materials Engineer will provide final approval for concrete mix design and he must approve all field adjustments required on concrete mix designs.

NOTE: THE CONSULTANT OR SUB-CONSULTANT CANNOT PROVIDE ANY MIX DESIGN SERVICES FOR THE CONTRACTOR.

Sampling frequency shall follow the terms of the ADOT Sampling Guide unless otherwise approved by the PROJECT MONITOR. The frequency of split samples for correlation testing will be determined by PROJECT MONITOR, but will generally occur at the approximate rate of one in five.

The split sample will be delivered to the PROJECT MONITOR, or designated location for testing and evaluation, within two (2) days from the sampling date unless otherwise approved.

A weekly up-to-date materials log on all test results will be maintained in the office utilizing the computer software provided by ADOT. Upon completion of construction of the project, the CONSULTANT shall submit the following signed certification:

This is to certify that:

The results of the tests on acceptance samples indicate that the materials incorporated in the construction work and the construction operations controlled by sampling and testing were in reasonably close conformity with the approved plans and specifications; such results compare favorably with the results of the independent assurance sampling and testing.

The CONSULTANT, under direction of the PROJECT MONITOR, may be requested to collect random materials samples as deemed necessary. Independent Assurance sampling and testing per ADOT'S materials procedures shall be performed by ADOT personnel.

INSPECTION

The CONSULTANT and Consultant's staff under this contract are responsible for inspecting all of the work performed by the CONTRACTOR on all of the contract's bid items to ensure compliance with ADOT specifications.

NOTE: THE CONSULTANT WILL NOT PERMITTED TO INCORPORATE OR CHANGE THE INSPECTION TEAM PERSONNEL ASSIGN TO THE PROJECT WITHOUT PRIOR WRITTEN APPROVAL OF THE PROJECT MONITOR AND CONSULTANT CONTRACT ADMINISTRATOR. INSPECTOR'S WORK HOURS SHOULD PARALLEL THE CONTRACTOR'S WORK SCHEDULE.

One hundred percent (100%) of the CONSULTANT'S inspection team shall meet one the following requirements:

- a) Engineering-In-Training certified by the State of Arizona with two years of highway experience acceptable to the Department.

- b) An individual with three years of highway experience acceptable to the Department and with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.
- c) Highway Construction technician certified by ACI and ATI.
- d) Resident Engineer's must possess a Arizona PE license.
- e) Office personnel must meet the criteria listed in Appendix C.

OFFICE DOCUMENTATION

GENERAL

The CONSULTANT shall provide and setup an office with a personnel computer capable of operating ADOT'S office and materials software (Contact Information Technology Group (I.T.G.) for Consultant Minimum PC Specifications.) and all other office equipment and supplies unless stated otherwise. Required office forms will be provided by (ADOT). Office setup to include all utilities, such as electricity, water and all other hook ups required performing administrative requirements of this contract.

The CONSULTANT shall maintain separate and distinct records, files, all necessary inspection diaries, log books, survey staking records, material tests results and all required documentation to justify all pay estimates; according to (ADOT) standards. Office documentation shall be input into ADOT's PEN program on a ADOT issued or leased personal computer for documentation and filing system services that meets the provisions established by ITG for this function. The computer shall be capable of handling ADOT'S computerized logging system software for documentation and reporting of project quantities. ADOT will provide the required office software to the CONSULTANT to properly administer the contract according to ADOT'S procedures. The CONSULTANT shall provide the hardware, operating systems, support and training to their project staff and sub-contractor(s) in the use of such hardware and software. ADOT'S Information Technology Group (I.T.G.) will be responsible for the installation of this software, and connections to the ADOT network.

Documentation will be done according to ADOT standards. ADOT standards include, but are not limited to the current

- ADOT Standard Specifications for Road and Bridge Construction
- ADOT Construction Manual
- ADOT Materials Testing Manual
- ADOT Materials Policy and Procedure Directives Manual
- ADOT Policies and Procedures Manual
- ADOT Office Engineering Manual
- ADOT Traffic Control Manual
- ADOT Construction Progress Estimate Program (CPE)
- ADOT Construction Management Program (CMP) Manual
- ADOT Partnering Evaluation Program (PEP)
- ADOT Supplemental Agreement Tracking System (SATS)

- MUTCD Chapter (6) and supplement and any other ADOT manuals referenced in the Project Contract Special Provisions.

One set of each of these pertinent documents will be provided by Engineering Records section upon request and must be returned to the respective Org. at the completion of this contract. Engineering Records is located at 207 S. 17th Avenue.

The CONSULTANT shall compile and submit in accordance with the current Construction Manual:

- Reports
- Records
- Employee Interview Verification
- Daily diary
- As-built plans
- Photographs
- Video recordings of various phases of construction and all other data required for proper completion of records of the project.
- **Complete finals within 45 days after acceptance.**
- Review certified payrolls on a monthly basis for acceptance.

The Consultant shall also adhere to the CPM schedule as well as adhere to materials procedures. Penalties will be assessed accordingly if payroll documentation is not submitted in the time allotted, please see Section 109.06 (C). Material penalties will also be assessed per Section 106.04 (C)(6).

The Consultant and his staff will retain a **DAILY DIARY** utilizing a computer either provided by ADOT or the firm describing the progress of the work on the project that will identify specific problems encountered and solutions. Each member of the CONSULTANT'S staff in accordance with the current Construction Manual shall keep this recorded pertinent information relative to the execution of the project utilizing the PEN / FAST system.

The CONSULTANT is responsible for all measurements and all other pertinent information necessary to generate monthly and final estimates, reports and as-built plans. ADOT will furnish a large set and two (2) half size sets of plans for each project to be used for as-built plans. As-built plans are to be developed containing all information of changes or additions to the original design as construction phases are completed. Upon completion of the project As-built plans are to be presented to ADOT.

WEEKLY MEETINGS

The CONSULTANT'S resident engineer shall conduct weekly meetings with the CONTRACTOR during the course of construction, as outlined in SECTION 108-04 of the 2000 Standard Specification for Road and Bridge Construction. These meetings shall be recorded and produced in a written summary with copies of minutes provided to all participants in attendance.

Partnering and relationship issues will be discussed at the weekly meetings (see example meetings format in the "Partnering, Fine Tuned Process" document dated September 2003). One meeting a month shall include a discussion of the Partnering Evaluation Process (PEP). Action plans to improve the partnering process shall be developed at the monthly meeting.

INVOICES

Reports along with monthly billing backup documentation will be entered into ADOT's automated invoicing system. This will then be sent to ADOT's Consultant Contract Administrator for review and processing. ADOT's Consultant Contract Administrator will return incomplete billing invoices.

PAY ESTIMATES

The CONSULTANT'S office staff will prepare intermediate and monthly pay estimates using the (CPE) Microcomputer program (CPE Power Builder Version) provided by ADOT. This program is a Window based network SQL server based program. The monthly estimates will be prepared in accordance with instructions outlined in the current Construction Manual.

The CONSULTANT must provide, in writing a request for copy of the approved microcomputer program for the preparation of progress payment estimate and other construction documentation software. Programs are provided from the Technical Information Resource (ITG) section. Direction on procedures for site license and PC Specifications can be obtained through ADOT ITG Support Desk at 602-712-7249 or Representative Jill Harvey at 602-712-3102 (See Note 1 authorization policy).

PROGRESS REPORTS

The CONSULTANT will submit narrative progress reports to the PROJECT MONITOR on a weekly and monthly basis. The weekly reports shall be delivered by Monday afternoon following the week covered in the report, and they shall contain considerable detail about activities on the project. The monthly reports shall be delivered by the fifth of each month, and shall consist of a brief recap of the project progress for the previous month.

Partnering evaluations shall be conducted in accordance with the fine-tuned Partnering Processes dated September 30, 2003 and shall be transmitted to the District and Phoenix partnering offices.

MANAGEMENT SCHEDULES

The CONSULTANT will be required to submit a management schedule each week in Manpower based on the Contractor's schedule. This schedule will show the CONSULTANT'S manpower plan on a weekly basis to parallel to the CONTRACTOR'S operation. The manpower schedule shall be updated by Friday at 10:00 am each week (web application) to the PROJECT MONITOR for his review and approval. The schedule will indicate the type and number of personnel anticipated to cover the CONTRACTOR'S operation for the up-coming week.

A Staffing Plan shall be prepared in accordance with CONSTRUCTION ENGINEERING MANAGEMENT PROGRAM (CMP) policies and procedures manual. Staffing Plan shall be prepared as outlined in Chapter 3 of the (CMP)

Procedures Manual, and submitted to the PROJECT MONITOR prior to start of work. Staffing Plan should be based on the CONTRACTOR'S original construction progress schedule presented at the pre-construction conference.

Updates to the CONSULTANT'S computer-staffing plan will be in accordance with Chapter 3 of the (CMP) Manual. ADOT will provide the computer-staffing plan software developed for use on a personnel computer using Microsoft Windows operating system upon a request in writing for copies of the (CMP) software to (ITG) (See note 1 authorization policy).

The Consultant must prepare a Monthly Summary and CEMS (Construction Engineering Manpower System) Report along with monthly billing backup documentation for them to enter into ADOT's automated invoicing system. This will then be sent to ADOT's Consultant Contract Administrator for review and processing. ADOT's Consultant Contract Administrator will return incomplete billing invoices.

The Consultant must utilize ADOT's transmittal log for tracking purposes of all correspondence, including RFI's, certifications, etc.

Documentation will be in accordance with ADOT standards. ADOT standards include, but are not limited to the current

- ADOT Construction Manual,
- ADOT 2008 Standard Specifications for Road and Bridge Construction
- ADOT Materials Testing Manual
- ADOT Materials Policy and Procedure Directives Manual
- MUTCD Chapter (6) and supplement and any other ADOT manuals referenced in the Project Contract Special Provisions.

SUPPLEMENTAL AGREEMENTS

The CONSULTANT'S Resident Engineer will initiate and create all CONTRACTOR'S Letter of Agreements, Change Orders and Force Account Work Requests through the use of SATS, including written justification and **cost analysis** for same. These are to be delivered to the PROJECT MONITOR for review and approval. After approval the CONSULTANT will obtain the Contractor's signature and return the documents to the PROJECT MONITOR for final execution. The CONSULTANT with the approval of the PROJECT MONITOR, may initiate Letter of Agreements, Change Orders and Force Accounts in accordance with Proposed Changes in Authority Levels Construction Supplemental Agreements, "Minor Alteration" Changes Order specification and Alterations of Contract.

The PROJECT MONITOR'S responsibility is being available, upon request, to assist the CONSULTANT in the preparation of Change Orders, Force Accounts, Monthly Estimates, etc. This assistance will be considered an informational service only to explain the flow of paperwork and the continuity of the work. The CONSULTANT will be expected to follow-up

on the paperwork flow in an expeditious manner to avoid any delays in timely submittals of documentation (i.e. mix design submittal, claim specifications, etc.), correspondence, conducting of meetings, and transmittal of responses to the CONTRACTOR to meet time constraints of the project.

If, in the opinion of the PROJECT MONITOR, the administrative requirements of this contract are not being met, written notification will be given to the CONSULTANT outlining these concerns and the necessary guidelines required to stay on schedule.

After written notification is presented and the administrative requirements are still not being met, retention action will be taken as per section 3.03, number 6 of the contract until requirements have been returned to acceptable practice.

CLAIMS

ADOT will evaluate each construction claim on an individual basis and will determine the extent of the CONSULTANT'S participation.

CONSTRUCTION COMPLETION ESTIMATES

When seventy-five percent (75%) of the contract time has been used on the project, the CONSULTANT shall advise the PROJECT MONITOR if, in his opinion, he can complete the project within the original time frame. If the CONSULTANT feels he cannot, a detailed analysis outlining the time needed to complete the project must be submitted along with a request for an extension of time. This must be completed and received by the PROJECT MONITOR prior to eighty percent (80%) of the contract time being used; **all costs incurred by the CONSULTANT thereafter shall not be recoverable.**

If unusual delays are anticipated, notification should be given to Field Reports Section immediately according to Section 1316.03 of the ADOT Construction Manual. **If after 60 days of the final acceptance of the project and Field Reports Section has not received the final project documentation; all costs incurred by the CONSULTANT thereafter shall not be recoverable. In addition, if there is to be rework done by Field Reports, there will be back charges to the CONSULTANT at the rate ADOT was billed.**

CERTIFICATION OF SUBSTANTIAL CONFORMANCE

At the end of construction of each project assignment, the CONSULTANT shall submit a signed certification stating that all work was done in substantial conformance with the project plans and specifications; and that all payments were made for work performed at the bid prices agreed to in the construction contract. At this time the CONSULTANT shall submit the completed as-built plans for the project to the PROJECT MONITOR. Each set of as-built plans must comply with the requirements of each contract and must possess the signature of approval of the PROJECT MONITOR.

PROJECT CLOSE OUT PARTNERING WORKSHOP AND EVALUATION

A project closeout evaluation and workshop for the project if required shall be performed in accordance with the ITD Policy and Implementation Memorandum SUP 03-2; Partnering Policy dated December 30, 2003.

PERFORMANCE REVIEW

Each task will be evaluated by the following groups and a satisfactory score will be at eighty percent or above. Failure to maintain satisfactory service may be grounds for termination.

- CCA (Billing)
- Project Monitor
- Field Reports
- Construction Operations
- Audit

APPENDIX A

ADOT SYSTEM FOR THE EVALUATION OF TESTING LABORATORIES

January 6, 2004

SCOPE OF SYSTEM

The Arizona Department of Transportation (ADOT) System for the Evaluation of Testing Laboratories has been implemented to formally approve materials testing laboratories to perform sampling and testing activities for ADOT. On all projects advertised/awarded by ADOT, the materials testing laboratory must satisfy the qualification criteria as specified herein and be approved by ADOT Materials Group prior to performing materials sampling and testing activities for the Department. For Certification Acceptance projects that are advertised/awarded by a local government agency, AASHTO accreditation in applicable test methods is sufficient. Those laboratories submitting asphaltic concrete mix designs must also meet the requirements of *Materials Group Policy and Procedure Directive No. 96-6, "Asphaltic Concrete Mix Design Proposals and Submittals"*, and be approved by the Materials Group Bituminous Engineer. Approved laboratories will be periodically evaluated to verify compliance with the system. The system is administered by the ADOT Materials Group Quality Assurance Section, under authority delegated by the State Engineer. The procedure will apply to any laboratory performing sampling and testing activities for the Department, directly or as a subconsultant.

The *ADOT System for the Evaluation of Testing Laboratories* is revised periodically. The current version can be viewed on the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>). The *ADOT System for the Evaluation of Testing Laboratories* is accessed as a selection item in either the Laboratory Inspection Program or the Proficiency Sample Program on the Materials Quality Assurance Section website.

ADOT SYSTEM CRITERIA

The ADOT system acknowledges the mechanism, established by the *AASHTO Accreditation Program (AAP)*, to recognize the competency of a laboratory to perform specific tests on construction materials. ADOT approved laboratories must obtain and maintain AASHTO accreditation for any AASHTO or ASTM test method specified or referenced by a contract document. In addition, AASHTO accreditation is required for any AASHTO or ASTM test method which an Arizona Test Method modifies.

A copy of AASHTO accreditation certificates must be transmitted to the ADOT Materials Group Quality Assurance Engineer immediately upon receipt by an ADOT approved testing laboratory.

The following requirements are in addition to Section 3, "AASHTO Accreditation Program Criteria", of the *AASHTO Accreditation Program Procedures Manual*:

3.1 Quality System Criteria is modified to add the following:

The laboratory shall have and maintain the current ADOT Materials Testing Manual. The manual shall be readily accessible to all laboratory personnel.

3.2 On-Site Inspection and Quality System Evaluation Criteria is modified to add the following:

Any laboratory performing materials sampling and testing in Arizona, or within 50 miles of its borders, for ADOT projects shall be open for inspection by Arizona Department of Transportation personnel at any time. ADOT Materials Group Quality Assurance Section shall regularly schedule and conduct periodic on-site equipment and procedural inspections at all approved permanently based laboratories. The laboratory shall demonstrate the capability to perform tests according to the current ADOT Materials Testing Manual for those testing services offered under the scope of this system.

Approval will be given for those AASHTO/ASTM test methods which the laboratory has obtained AASHTO accreditation and which are successfully demonstrated during the ADOT inspection. Approval will be given for those Arizona Test Methods which modify AASHTO/ASTM methods, if the laboratory has AASHTO accreditation for the AASHTO/ASTM methods, and the Arizona Test Methods are successfully demonstrated during the ADOT inspection. Approval will also be given for unique Arizona Test Methods that are successfully demonstrated during the inspection.

A written response to any deficiencies noted during ADOT inspections shall be submitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of notification. Failure to respond to noted deficiencies within the 30 day limit will be grounds for revocation of ADOT approval.

Laboratory inspections performed by ADOT Materials Group Quality Assurance Section will be conducted according to Table 1.

To perform acceptance or quality control sampling and testing on a project, a lab facility must be located within 50 miles of the project site. In addition, the lab must be completely equipped for all phases of project-related sampling and testing, as required by the contract specifications.

At least 10 days prior to any phase of construction requiring materials acceptance sampling and testing by the laboratory, the Resident Engineer shall notify the ADOT Materials Group Quality Assurance Engineer in writing to request an inspection of a portable or satellite laboratory. Portable or satellite laboratories contracted to do materials acceptance sampling and testing on ADOT projects shall be set up and available for inspection by ADOT at least 5 days prior to any phase of construction requiring materials acceptance sampling and testing by the laboratory.

As an addendum to their AAP Quality Systems Manual, each approved lab shall submit, for review and acceptance by ADOT, written policy and procedures that address the following issues:

1. How portable or satellite laboratories maintain test method and specification compliance while sampling and testing materials for ADOT projects.
2. How inspection and calibration of sampling and testing equipment at portable or satellite laboratories are performed and documented.
3. How the correlation testing program is performed between the accredited "parent" laboratory and its portable or satellite facilities.

Copies of AMRL and CCRL inspection reports and responses to any deficiencies shall be transmitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of receipt of the inspection report.

Additional information regarding laboratory inspections can be found in Series 900 "Materials Quality Assurance Program" of the ADOT Materials Testing Manual, obtained from Materials Group Quality Assurance Section, or by accessing the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>).

3.3 Proficiency Testing Criteria is modified to add the following:

The laboratory shall participate in the ADOT Proficiency Sample Program, performing at least those test methods for which ADOT approval has been granted. A written response to any deficiencies shall be submitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of notification. Failure to respond to deficiencies within the 30 day limit will be grounds for revocation of ADOT approval. If a laboratory does not perform testing on 2 consecutive sets of proficiency samples of the same material type, that laboratory will be removed from the ADOT Proficiency Sample Program entirely. If that laboratory is also an ADOT approved laboratory, **it will lose ADOT approval to perform sampling and testing on ADOT projects.**

Copies of AMRL and CCRL proficiency sample test result reports and responses to deficiencies shall be mailed to the ADOT Materials Group Quality Assurance Engineer within 30 days of receipt of the final report.

Additional information regarding the ADOT Proficiency Sample Program can be found in Series 900 "Materials Quality Assurance Program" of the ADOT Materials Testing Manual, obtained from Materials Group Quality Assurance Section, or by accessing the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>).

3.4 Personnel Qualification Criteria is modified to add the following:

An individual who is **responsible for supervising sampling and testing** shall meet the requirements given in Table 2 for the appropriate field in which sampling and testing is being performed.

Individuals who **perform actual sampling and testing** shall meet the requirements given in Table 3 for the appropriate field in which sampling and testing is being performed, and shall be supervised by an individual who meets the requirements of Table 2 for the appropriate field in which sampling and testing is being performed.

TABLE 1
LABORATORY INSPECTION REQUIREMENTS

| TYPE OF LAB | Evaluate personnel, Quality Systems Manual, etc. | <u>Inspect</u> methods & equipment <u>on a regular schedule or as needed</u> | Approve via Acceptance Letter | Include in ADOT Directory of Approved Testing Labs | Performing <i>acceptance</i> sampling and testing for ADOT: <u>INSPECT PER PROJECT</u> | Performing quality control sampling and testing for Contractor: <u>INSPECT PER PROJECT</u> |
|--|--|--|-------------------------------|--|---|---|
| All ADOT Labs Statewide | X | X | X | | | |
| AASHTO Accredited Independent Labs within Arizona* which are ADOT approved | X | X | X | X | | |
| Satellite Labs** within Arizona* of an ADOT Approved Lab | | X | | | X | AS REQUESTED BY THE RESIDENT ENGINEER |
| Satellite Labs** within Arizona* of an out-of-state AASHTO accredited independent Lab which is not ADOT Approved | X | X | X | | X | X |
| Portable Labs*** within Arizona* of an ADOT Approved Lab | | | | | X | AS REQUESTED BY THE RESIDENT ENGINEER |
| * Operating within Arizona, or within 50 miles of Arizona borders. | | | | | | |
| ** Any permanently based lab facility operating under the authority, and AASHTO accreditation of, a main laboratory facility ("parent" lab). | | | | | | |
| *** Portable lab facility operating under the authority, and AASHTO accreditation of, a main laboratory facility ("parent" lab). | | | | | | |

| TABLE 2 SUPERVISOR REQUIREMENTS | |
|--|---|
| <i>Soils and Aggregate</i> | |
| <u>Field</u> | <u>Laboratory</u> |
| Arizona Technical Institute (ATI) "Field" Certification required plus one of (a) through (g) Below. | Arizona Technical Institute (ATI) "Soils/Aggregate" Certification required plus One of (a) through (g) below. |
| <i>Asphalt Concrete</i> | |
| <u>Field</u> | <u>Laboratory</u> |
| Arizona Technical Institute (ATI) "Field" Certification required plus one of (a) through (g) Below. | Arizona Technical Institute (ATI) "Asphalt" Certification required plus one of (a) through (g) below. |
| <i>Concrete</i> | |
| American Concrete Institute (ACI) "Concrete Field Testing Technician Grade I" Certification plus one of (a) through (g) below. | |

(a) Professional Engineer, registered in the State of Arizona, with one year of highway materials testing experience acceptable to the Department.

(b) Engineer-In-Training, certified by the State of Arizona, with two years of highway materials testing experience acceptable to the Department.

(c) Obtained a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology, Construction, or related field acceptable to the Department; and with three years of highway materials testing experience acceptable to the Department.

(d) Certified by the National Institute for Certification in Engineering Technologies (NICET) in the Construction Materials Testing field as an Engineering Technician (Level III) or higher in the appropriate subfield in which sampling and testing is being performed.

(e) Certified by NICET in the Transportation Engineering Technology field as an Engineering Technician (Level III) or higher in the Highway Materials subfield.

(f) Certified by NICET as an Engineering Technician, or higher, in Civil Engineering Technology with five years of highway materials testing experience acceptable to the Department.

(g) An individual with eight years of highway materials testing and construction experience acceptable to the Department.

| TABLE 3 TECHNICIAN REQUIREMENTS | |
|---|--|
| <i>Soils and Aggregate</i> | |
| <u>Field</u> | <u>Laboratory</u> |
| Arizona Technical Institute (ATI) "Field" Certification | Arizona Technical Institute (ATI) "Soils/Aggregate" Certification |
| <i>Asphalt Concrete</i> | |
| <u>Field</u> | <u>Laboratory</u> |
| Arizona Technical Institute (ATI) "Field" Certification | Arizona Technical Institute (ATI) "Asphalt" Certification |
| <i>Concrete</i> | |
| American Concrete Institute (ACI) "Concrete Field Testing Technician Grade I" Certification | |

Additional information regarding certification requirements can be obtained from ADOT Materials Group Quality Assurance Section, or by accessing the Materials Quality Assurance Section website (<http://www.dot.state.az.us/about/materials/qa/index.htm>).

3.5 Additional General Criteria is modified to add the following:

Copies of a laboratory's notification to or from AASHTO of any major change in its quality system, capability to perform tests for which it is accredited, laboratory ownership, location (for permanent facilities), managerial personnel, facilities, and any other change which may affect the scope of its accreditation shall be transmitted to the ADOT Materials Group Quality Assurance Engineer within 30 days of when the change occurs.

The ADOT Materials Group Quality Assurance Engineer must be notified within 30 days of changes in supervisory and key technical personnel.

To be eligible to perform referee testing on ADOT projects as an independent testing laboratory, the laboratory must provide proof to the Department of their independent status by submitting a letter to the ADOT Materials Group Quality Assurance Engineer indicating all individuals and corporations which have ownership of the laboratory. In addition, the letter must indicate that each of the owners of the laboratory is devoid of any ownership in contracting firms or materials suppliers who perform work for the Department.

James P. Delton
Assistant State Engineer (Acting)
Materials Group

APPENDIX B
CONSTRUCTION ACTIVITY CODING STRUCTURE

| CONSTRUCTION ACTIVITY CODING SYSTEM | | | | | |
|---|--|------------------------------------|---|------------------------------------|--|
| ACTIVITY CODE | | PLANNING ACTIVITY | | ACTIVITY CODE | |
| PLANNING ACTIVITY | | PLANNING CODE | | PLANNING ACTIVITY | |
| <u>EARTHWORK</u> | | <u>CONCRETE INCIDENTALS</u> | | <u>SPECIAL FEATURES</u> | |
| 601 | EARTHWORK Includes removal items | 651 | MAJOR CONCRETE INCIDENTALS Retaining/bin/barrier walls, lined Channel, approach, slab replacements. | 671 | PUMP AREA |
| <u>BASE COURSES</u> | | 652 | MINOR CONCRETE INCIDENTALS Catch basins, junction boxes, cattleguards, headwalls, dissipators, curb, curb & gutter, spillways, median & gore paving, sidewalks, driveways, slope paving, manholes, reset manholes, standpipes | 672 | PUMP HOUSE |
| 611 | BASE COURSES – GENERAL | | | 673 | PERMANENT TRAFFIC DEVICES & ELECTRICAL SYSTEMS Signs, lighting, loop detectors. |
| 612 | LEAN CONCRETE BASE | | | 674 | LANDSCAPE PLANTING |
| <u>SURFACE COURSES – ASPHALT</u> | | | | 675 | LANDSCAPE IRRIGATION |
| 621 | NEW A.C. | | | 676 | PAVEMENT MARKERS Raised and recessed pavement markers, permanent striping. |
| 622 | RECYCLED A.C. | | | <u>UNIQUE</u> | |
| 623 | SEAL COATS(Including A.C.F.C.) | | | 681 – 689 SPECIAL AUTHORIZATION | |
| <u>SURFACE COURSES – P.C.C.P.</u> | | | | <u>GENERAL</u> | |
| 631 | NEW P.C.C.P. | | | 691 | PROJECT ADMIN. & OFFICE WORK |
| 632 | P.C.C.P. REHABILITATION | | | 692 | TRAVEL TIME |
| <u>STRUCTURES</u> | | | | 693 | CLAIMS |
| 641 | PIPES | 694 | MISCELLANEOUS PROJECT RELATED Short term standby, waiting on contractor or weather, mobilization, equipment maintenance, Facility maintenance, lab Miscellaneous. | | |
| 642 | CONCRETE BOX STRUCTURES (Includes Structural Plate Pipes) | 695 | PARTNERING | | |
| | | 663 | MISC. INCIDENTALS NON-CONCRETE Fence, bank protection, rip-rap, gabions, etc., RW Markers, survey monuments, water valves, seeding & mulching,bridge rails. | | |

NOTE: THESE PERSONNEL FUNCTIONS ARE USED TO FURTHER DEFINE THE
ABOVE CODES

1. JOB-SITE MANAGEMENT 2. FIELD OFFICE 3. SURVEY 4. LAB
 (RES. ENG. & ASSIST.) 5. INSPECTION 6. ON-THE JOB TRAINING
 (ON PROJECT)

APPENDIX C

CLASSIFICATION GUIDELINES FOR CONSTRUCTION TECHNICIANS

CONSTRUCTION TECHNICIAN ENGINEERING WORKER (S1)

THIS IS A TRAINING CLASS

This position is open to first year engineering students and non-construction experience personnel.

Work description:

This is a training class. Incumbents perform engineering work with progressing responsibility as skills and knowledge increase. Incumbents are expected to be moved ahead to entry/journey level position in the area of assignment upon meeting the minimum requirements.

Work conditions:

Depending on the assignment, incumbent may be required to spend some amount of time away from home base or work in rugged terrain.

Supervision:

This class has no supervisory role. Training in the area of assignment will provide the required skills and knowledge for advancement. Direct supervision will be provided through the training period.

Knowledge and skills preferred:

Knowledge of procedures and techniques of surveying, construction standards inspection, quality control and/or materials analysis.

Knowledge of proper construction documentation procedures.

Knowledge of function of this contract.

Knowledge of safety practices and procedures

Responsibility:

For completing work assignment assigned by the supervisor for applying one's self in order to increase and expand knowledge base at elementary working level.

CONSTRUCTION TECHNICIAN ENGINEERING WORKER ADOT EQUIVALENT (S1)
THIS IS A TRAINING CLASS OPEN TO FIRST YEAR ENGINEERING STUDENTS AND
NON-CONSTRUCTION EXPERIENCE PERSONNEL.

- TRANSPORTATION ENGINEERING WORKER

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED TO
THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Engineering Worker
Organizations/Work Settings: Highways Division
FLSA: NE Department of Transportation Revised:

Class Code: 97320
Class Established: 04/23/84
01/24/92

Pay Grade: 10

WORK DESCRIPTION:

This is a training class. Appointment to this class may not exceed 24 months. There will be no permanent allocations in this class. Incumbents perform engineering work with progressing responsibility as skills and knowledges increase. Incumbents are expected to be promoted to an entry/journey level position in the area of assignment upon meeting the minimum requirements.

WORK CONDITIONS:

Depending on the assignment, incumbent may be required to spend considerable amount of time away from home base or work in rugged terrain.

SUPERVISION:

This class has no supervisory role. Training in the area of assignment will provide the required skills and knowledges for advancement. Direct supervision will be provided through the training period.

KNOWLEDGES APPLIED:

Knowledge of procedures and techniques of surveying, construction standards, inspection, quality control, and/or materials analysis. Knowledge of proper construction documentation procedures. Knowledge of organization and function of the agency. Knowledge of agency safety practices and procedures.

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WORK RESULTS/PRODUCTS:

Completed work assignment applicable to the work unit.

RESPONSIBILITY:

For completing work assignments assigned by the supervisor; for applying one's self in order to increase and expand knowledge base at elementary working level.

AUTHORITY:

Decisions that affect the work assignment as delegated by the supervisor.

SKILLS APPLIED:

Skill in surveying, computation, construction, inspection, and/or materials analysis. Skill in reading and interpreting highway maps/plans. Skill in the operation of electronic calculator and performing basic engineering calculations. Skill in the safe operation and care of various tools and equipment used in the work unit.

WORK ACTIVITIES (Characteristic Tasks) - MAJOR and minor:

COUNTS PASSING VEHICLES WITH COUNTER, AND FILLS IN REPORT TO ESTABLISH DATA BASE FOR TRAFFIC ENGINEERING.
TOTALS AND SUMMARIZES VEHICLES COUNTED IN HIGHWAY COUNT, BY SIZE, NUMBER OF AXLES, AND OTHER FEATURES.
WEIGHS HEAVY EARTH-MOVING EQUIPMENT TO DETERMINE AMOUNT OF CONSTRUCTION MATERIALS BEING USED; WRITES WEIGHT TICKETS.
COLLECTS WEIGHT TICKETS FROM TRUCK DRIVERS AT DUMPING SITES AND COMPUTES, USING WEIGHT FIGURES, THE AREA TO BE COVERED WHEN MATERIAL IS DUMPED.
USING SIEVE SCALES AND CALCULATOR, ANALYZES CRUSHED AGGREGATES FOR GRADATION REQUIREMENTS BY FINDING THE PERCENTAGE OF GIVEN AGGREGATE SIZES OF MATERIALS SAMPLED.
TAKES SOIL SAMPLES OF CONSTRUCTION PROJECT AND THEN ANALYZES SAMPLES IN FIELD LABORATORY TO DETERMINE COMPACTION AND MOISTURE CONTENT.
OPERATES CORE DRILLING MACHINE TO TAKE MATERIALS SAMPLES FROM ROAD FOR ANALYSIS.
PERFORMS TESTS IN LABORATORY ON SOIL COMPOSITION, SURFACING MATERIAL AGGREGATES, OIL AND WATER CONTENT, EMBANKMENT COMPACTION, PLANT MIX DENSITY, AND OTHER FACTORS AS REQUIRED.

MINIMUM QUALIFICATIONS:

Ability as determined by the Personnel Division through evaluation of training, experience, and/or examination to perform or learn to perform the outlined duties.
Special Selection Factors:
Ability to lift a minimum of 35 pounds and carry loads over rough terrain. A medical/physical evaluation is required prior to appointment.
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Class Code: 97320

COMPARES TWO OR MORE FORMS, LISTS, COLUMNS, OR AGGREGATIONS OF FIGURES, USING VISUAL OBSERVATION AND ADDING MACHINE, AND TOTALS BOTH SETS OF FIGURES, NOTING DISCREPANCIES, AND RECHECKING OWN WORK FOR ERRORS.
READS AND STUDIES INSTRUCTIONAL OR INFORMATIONAL MATERIAL IN ORDER TO INCREASE AND EXPAND KNOWLEDGE BASE AT ELEMENTARY WORKING LEVEL IN THE WORK SYSTEM.
PERFORMS ALL TASKS NECESSARY FOR SETTING UP TRAFFIC CONTROL.
DURING THE PERFORMANCE OF SURVEYS, ACTS AS RODMAN; ERECTS SIGNALS AND TARGETS; CLEANS LINE OF OBSTACLES; DRIVES STAKES; ERECTS SURVEY STATIONS.
ERECTS AERIAL PHOTOGRAPHY TARGETS, CLEANS AREA OF OBSTACLES, BRUSH, ETC.
PERFORMS DAILY MAINTENANCE OF VEHICLES; ADDS GAS, WATER, OIL, AND AIR AS NEEDED.
Confers with supervisor on regular basis, discussing work processes, incidents, problems and plans, and receiving advice, counseling, and instruction.
Performs relates work as required.

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CONSTRUCTION TECHNICIAN I

IDEAL CANDIDATE SHALL BE ATI OR ACI CERTIFIED – IF THIS CERTIFICATION IS NOT OBTAINED, NO COMPENSATION FOR THIS CLASS WILL BE MADE

Performs a variety of semi skilled activities.

Examples of duties assigned to this classification are:

Rodding, chaining, or setting stakes or pins on a survey crew.

Conducting quality control tests such as soil densities, sieve analysis test, operation scales and inspecting spread operations.

Sampling and transporting produced construction materials from point of application or production to testing laboratory.

Knowledge and skills required:

Knowledge of tools, equipment and vehicles utilized in highway construction.

Knowledge of standard equipment and materials used for the sampling and testing of construction material.

Knowledge of basic mathematics used in the computation of a variety of construction items.

Knowledge of record keeping preparing of documents and reports.

One year experience as a Engineer Worker or equivalent is required.

Please note: Tech I Office / Administrative personnel must have successfully completed CPE and Certified Payroll training.

CONSTRUCTION TECHNICIAN I, ADOT EQUIVALENT (S4)
CANDIDATE SHALL BE ATI OR ACI CERTIFIED OR AN ENGINEERING STUDENT
WITH 30 SEMESTER HOURS AND NO HIGHWAY CONSTRUCTION
EXPERIENCE.

Performs a variety of semi-skilled activities

- TRANSPORTATION CONSTRUCTION TECHNICIAN I
- TRANSPORTATION MATERIALS TECHNICIAN II

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED TO
THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Construction Technician I Class Code: 34396
Organizations/Work Settings: Department of Transportation Class Established: 05/08/92
FLSA: NE Highways Division Revised: 09/07/00

WORK DESCRIPTION:

Performs a variety of technical highway work of routine difficulty and is normally assigned to more than one area of construction. Examples of duties assigned to this class are: chaining, rodding, and staking on a survey crew; receiving training in the inspection of minor construction items and the operation of survey instruments; conducting quality control tests such as nuclear density and sieve analysis tests and operating scales and inspecting spread operations; and performing introductory level engineering and constructions records maintenance and verification in a construction field office.

WORK CONDITIONS:

Depending on area of assignment, may be exposed to extreme weather conditions, required to travel frequently and/or required to lift heavy materials. Subject to hazards of moving traffic when working in construction areas.

SUPERVISION:

Regularly assigned duties will be performed under general supervision. Close supervision will be provided when performing unfamiliar or advanced level duties in a training capacity.

KNOWLEDGES APPLIED:

Tools, equipment, and vehicles utilized within the area(s) of assignment.
Agency standards, policies, and procedures applicable to the area(s) of assignment.
Approved record keeping and documentation

Pay Grade: S4

WORK RESULTS/PRODUCTS:

Completed work assignments within assigned area(s) of construction; completed training in multiple areas of construction and in advanced level duties within area(s) of assignment; established construction project files; payroll verification.

RESPONSIBILITY:

For timely and accurate completion of assigned projects; proper use, operation, maintenance, and repair of assigned equipment; maintaining records of construction project payrolls, and ensuring accuracy of payroll calculations.

AUTHORITY:

To notify supervisor of construction items or procedures which are not in compliance with specifications. Determine acceptability and mathematical accuracy of payrolls and reports submitted by contractors.

SKILLS APPLIED:

Operating and maintaining a variety of construction survey and quality control equipment.
Operating a variety of office equipment including a calculator.

Reading and interpreting a variety of construction documents, including highway maps and plans.
Safe operation of automotive equipment.
Verbal and written communications.

methods, procedures, and techniques.
Basic mathematics used in the computation of a variety of construction items.

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WORK ACTIVITIES (Characteristic Tasks) -

MAJOR and minor:

SETS SAFETY CONES AND FLAGS IN STREET.

DIRECTS VEHICULAR TRAFFIC AROUND ROAD

CONSTRUCTION SITES WITH HAND-HELD FLAG OR

SIGNS.

WEIGHS HEAVY EARTH-MOVING EQUIPMENT TO

DETERMINE AMOUNTS OF CONSTRUCTION MATERIALS

BEING USED; WRITES WEIGHT TICKETS.

COLLECTS WEIGHT TICKETS FROM TRUCK DRIVERS AT

DUMPING SITES AND COMPUTES, USING WEIGHT

FIGURES, THE AREA TO BE COVERED WHEN MATERIAL

IS DUMPED.

USING SIEVE SCALES AND CALCULATOR, ANALYZES

CRUSHED AGGREGATES FOR GRADATION REQUIREMENTS

BY FINDING THE PERCENTAGE OF GIVEN AGGREGATE

SIZES OF MATERIALS SAMPLE.

TAKES SOIL SAMPLES OF CONSTRUCTION PROJECT

AND THEN ANALYZES SAMPLES IN FIELD LABORATORY

TO DETERMINE COMPACTION AND MOISTURE CONTENT.

PARTICIPATES IN FIELD ENGINEERING SURVEYS,

INCLUDING SETTING UP LEVEL AND TRANSIT,

TAKING NOTES, HOLDING ROD AND CHAIN.

MINIMUM QUALIFICATIONS:

One year of experience using sieve scales and calculator; OR collecting and analyzing soil samples in field laboratory, performing laboratory test on soils or surfacing materials aggregates and related duties; OR performing introductory level engineering and construction documentation; OR assisting in minor construction project inspection. 30 semester hours applicable toward a Bachelors degree in engineering or closely related curriculum may substitute for the required experience.

Special Selection Factors:

A medical/physical evaluation is required prior to appointment.

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Class Code: 34396

MAINTAINS PROJECT FILES, CONSTRUCTION DOCUMENTS AND QUANTITATIVE CONSTRUCTION RECORDS; EXAMINES FORMS AND DOCUMENTS FOR ACCURACY; PERFORMS BASIC MATHEMATICAL CALCULATIONS.

Fills in precise information on a variety of forms, reports, and records, from a variety of highly specific sources.

Fills in time sheets, records of work performed, expense vouchers, vehicle reports, or other routine work reports.

Confers with supervisor on regular basis, discussing work processes, incidents, problems and plans, and receiving advise, counseling, and instruction.

Inspection of minor construction items.

Performs related work as required.

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Materials Technician II Class Code: 97396
Organizations/Work Settings: Highways Division Class Established: 04/23/84
FLSA: NE Department of Transportation Revised:

WORK DESCRIPTION:

Operates a variety of pavement performance equipment, such as the Mu-Meter, Mays Ride Meter and Dynaflect to collect data on roadway conditions on the State highway system; transports equipment to and from test site; may supervise staff assigned to assist with field tests.

WORK CONDITIONS:

Extensive daily travel; frequent overnight stays away from home base; exposure to those hazards normally associated with working in moving traffic.

SUPERVISION:

Most tasks are performed in the field independent of any direct supervision.

Technical advice and assistance will be provided as requested.

KNOWLEDGES APPLIED:

Knowledge of the purpose and proper usage of all pavement performance testing equipment.
Knowledge of inspection methods, procedures and techniques.
Knowledge of the State highway system.
Knowledge of acceptable traffic safety procedures used during testing.

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WORK ACTIVITIES (Characteristic Tasks) - MAJOR

and minor:
RECORDS DATA FROM CONTROLLED FIELD OPERATIONS.
OPERATES THE RIDE-METER BY POSITIONING THE

Pay Grade: 15 \$

WORK RESULTS/PRODUCTS:

Completed field test data; complete field records and reports.

RESPONSIBILITY:

Scheduling and prioritizing work assignments for self and/or subordinate staff within established time frames; proper care, maintenance and operation of pavement testing equipment.

AUTHORITY:

Determines most efficient routing of equipment within established schedule; decisions affecting scheduling of self and/or subordinate staff; decisions regarding types of traffic control needed.

SKILLS APPLIED:

Skill in the operation, calibration and maintenance of pavement testing equipment.
Skill in analyzing and evaluating the completeness and accuracy of test data.
Skill in visually observing and evaluating roadway conditions.
Skill in coding and reducing field data.

Class Code: 97396

SEARCHES FOR AND RETRIEVES INFORMATION FROM FILES,
AND RESPONDS TO INFORMATIONAL REQUESTS REQUIRING
SOME JUDGMENT OR DISCRETION REGARDING CURRENT AND

INK-PENS, SWITCHING THE MACHINE ON AND INSCRIBING ROAD DESCRIPTIONS ON THE CHART PAPER TO INDICATE THE LOCATION OF THE TESTING. ASSISTS IN PERFORMING SKID TESTS BY TURNING WATER ON AND OFF AT THE APPROPRIATE TIMES AND MARKING THE TEST LOCATION ON THE PAPER.

MINIMUM QUALIFICATIONS:

Two years of experience equivalent to the Transportation Materials Technician I.

Special Selection Factors: None.

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SPECIFIC BUSINESS OF THE WORK SYSTEM, AS REFLECTED IN THE RECORDS; THIS COMMUNICATION MAY BE BY TELEPHONE OR BY DIRECT PERSONAL CONTACT.

Conducts road survey in various parts of State by driving on roads and noting location, physical features, bridge types, right-of-way and other features.

Performs related work as required.

CONSTRUCTION TECHNICIAN II

IDEAL CANDIDATE SHALL BE ATI AND ACI CERTIFIED – IF THIS CERTIFICATION IS NOT OBTAINED, NO COMPENSATION FOR THIS CLASS WILL BE MADE

Performs a variety of skilled activities for field and office including preparing weekly time reports, reviewing certified payrolls and developing the monthly progress estimate, etc.

Examples of duties assigned to this class are:

Operating instruments for a survey for a survey crew, inspecting minor construction items, sampling and inspection of concrete placing operation.

Collect and analyze soil samples of construction materials to determine compaction and moisture content.

Inspection and sampling of all phases of asphaltic concrete paving operation in progress and its conformance to specifications and construction plans. Answers questions and resolves problems.

Inspects construction in progress, to ensure conformance with specifications, agreements, and established requirements.

Keep daily diary of work progress.

Prepares reports on all field inspections, and submits project quantities on a daily basis.

Keep accurate documentation for force accounts and possible claims.

Knowledge and skills required

All knowledge and skills required of lower classification.

Knowledge of currently accepted methods, procedures, and techniques used in highway construction inspection, survey, materials testing, and quality control equipment.

Skill in interpersonal relations, as applied to contact with contractors, representatives of other governmental jurisdictions, and other ADOT staff.

Two years as a Tech I or equivalent is required.

Please note: Tech II Office / Administrative personnel must have successfully completed CPE, Force Accounts, Certified Payroll and PEN training.

CONSTRUCTION TECHNICIAN II, ADOT EQUIVALENT (S5)
CANDIDATE SHALL BE ATI AND ACI CERTIFIED OR AN ENGINEERING STUDENT
WITH 60 HOURS AND 3 MONTH HIGHWAY CONSTRUCTION EXPERIENCE.

Performs a variety of highly skilled activities

- TRANSPORTATION CONSTRUCTION TECHNICIAN II
- TRANSPORTATION MATERIALS TECHNICIAN III

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED
TO THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Construction Technician II Class Code: 34397
Organizations/Work Settings: Department of Transportation Class Established: 05/08/92
FLSA: NE Highways Division Revised: 09/07/00

WORK DESCRIPTION:

Performs a variety of journey-level survey, inspection, materials sampling and analysis, and/or project control and administrative support work in a highway construction environment. Examples of duties assigned to this class are: operating instruments for a survey crew; inspecting minor construction items, hot plants, and concrete plants; performing a wide range of the more complicated lab or field quality control tests; maintaining adequate documentation of all assigned activities; performs routine tests on soil, aggregate and other construction materials in a construction lab; performs administrative or advanced engineering and construction records maintenance duties in a construction field office.

WORK CONDITIONS:

Depending on area of assignment, may be exposed to extreme weather conditions, required to travel frequently and/or required to life heavy materials. Subject to hazards of moving traffic when working in construction areas.

SUPERVISION:

Many tasks performed in a highway construction environment are independent of any direct supervision. Close supervision will be provided when performing unfamiliar

Pay Grade: S5

WORK RESULTS/PRODUCTS:

Completed work assignments within assigned area(s) of construction; completed documentation of all phases of assignments; completed training as prescribed.

RESPONSIBILITY:

For timely and accurate completion of assigned projects; proper use, operation, maintenance, and repair of assigned equipment.

AUTHORITY:

To recommend rejection of materials or workmanship, which are not in compliance with agency specifications; recommend stop work orders for project procedures not in compliance with agency specifications; decide on proper materials testing techniques and procedures in accordance with prescribed standards.

SKILLS APPLIED:

Operating and maintaining a variety of construction survey, materials testing, and quality control equipment.
Reading and interpreting a variety of construction documents, including highway maps and plans, and materials test results.

Interpersonal relations, as applied to contacts with contractors and other agency staff.
Safe operation of automotive equipment.
Operation of a variety of office equipment.
Verbal and written communications.

or advanced level duties in a training capacity.

KNOWLEDGES APPLIED:

Methods, procedures, and techniques used in highway construction project inspection, survey, materials testing, documentation, and contract compliance.

Federal and state statutes and agency standards, policies, and procedures applicable to the area(s) of assignment. Tools, equipment, and vehicles utilized within the area(s) of assignment.

Approved record keeping and documentation methods, procedures, and techniques.

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WORK ACTIVITIES (Characteristic Tasks) -

MAJOR and minor:

WEIGHS, MEASURES, AND PERFORMS ELEMENTARY TEST ON DRILL CORE MATERIALS AND RECORDS RESULTS.

INSPECTS HIGHWAY CONSTRUCTION ON AN ONGOING BASIS TO ASSURE COMPLIANCE WITH CONTRACT AND STATE AND FEDERAL STANDARDS; INSPECTIONS AND EXAMINATIONS ARE MADE OF MATERIALS, SURFACE CONDITION, PROPER TRACKING, STRUCTURAL FEATURES, AND OTHER RELEVANT FACTORS. PERFORMS TESTS IN LABORATORY ON SOILS COMPOSITION, SURFACING MATERIAL AGGREGATES, OIL AND WATER CONTENT, EMBANKMENT COMPACTION, PLANT MIX DENSITY, AND OTHER FACTORS AS REQUIRED.

USING SURVEY INSTRUMENTS AND EQUIPMENT, PERFORMS LOCATION, STRATA, TOPOGRAPHIC, BOUNDARY, DRAINAGE, AND OTHER MEASUREMENTS AS REQUIRED IN THE CONSTRUCTION OF HIGHWAY OR OTHER CONSTRUCTION PROJECTS.

Class Code: 34397

MAINTAINS HIGHWAY CONSTRUCTION CONTRACT DIARIES, PROGRESS REPORTS, ROYALTY RECORDS, DOCUMENTATION OF PAY QUANTITIES, AND FINAL SUMMARIES OF ALL RELEVANT DATA PERTAINING TO HIGHWAY CONSTRUCTION PROJECTS.

Checks or verifies calculations on quantity summaries for highway construction bid items. Examines and verifies numeric data and specifications on source documents by recalculating computations, using geometry or trigonometry.

Compares two or more forms, lists, columns, or aggregation of figures, using visual observation and adding machine and totals both sets of figures, noting discrepancies and rechecking own work for errors.

Calculates expenses, cumulative charges, receipts, or other fiscal data for daily and other periodic records; changes computations if necessary. Examines payroll documents from public contractors

INTEGRATED INTO WORK ROUTINE, OR IN TIME SET ASIDE FOR TRAINING, ACQUIRES KNOWLEDGE AND SKILLS NEEDED FOR ADVANCEMENT TO OR FOR EFFECTIVE PERFORMANCE AS JOURNEYMAN WORKER OR SKILLED TECHNICIAN LEVEL IN THE WORK SYSTEM. CONSULTS MANUAL, RULEBOOK, CODES, OR REGULATIONS IN ORDER TO FIND EXACT REQUIRED COURSE OF ACTION, DETERMINATION, OR AUTHORIZATION.

MINIMUM QUALIFICATIONS:

Two years of technical highway work, such as chaining, rodding and staking on a survey crew, operating survey equipment; OR conducting quality control tests; OR performing engineering and construction records maintenance and verification or related duties; OR assisting in inspecting highway construction projects, material laydown and concrete placement. 60 semester hours applicable towards a Bachelor degree in Engineering or closely relates curriculum may substitute for one year of the required experience.

Special Selection Factors:

A medical/physical evaluation is required prior to appointment.

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to assure completeness, accuracy and compliance with contract.

Performs related work as required.

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Materials Technician III Class Code: 97397
Organizations/Work Settings: Highways Division Class Established: 04/23/84
FLSA: NE Department of Transportation Revised:

WORK DESCRIPTION:

Supervises and directs the activities of staff involved in maintaining project status files and updating pavement management information; codes pavement management data for computer input; reviews and evaluates computer output; may conduct field tests as required.

WORK CONDITIONS:

No unusual work conditions.

SUPERVISION:

Works under the general direction of a Transportation Engineer - Team Leader and exercises some independent judgment within established program parameters and guidelines.

KNOWLEDGES APPLIED:

Knowledge of methods, procedures and techniques used in reducing and interpreting pavement management data.
Knowledge of computer entry methods, procedures and techniques.
Knowledge of the Highway Surface Condition rating system.
Knowledge of computer programs available for use in the work unit.

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WORK ACTIVITIES (Characteristic Tasks) - MAJOR and minor:

INSTRUCTS, GUIDES AND COUNSELS SUBORDINATE-LEVEL WORKERS IN CARRYING OUT A VARIETY OF TASKS.

REVIEWS, VERIFIES OR INSPECTS WORK OF SUBORDINATE-LEVEL WORKERS, FOR QUALITY CONTROL.

CONDUCTS ROAD SURVEY IN VARIOUS PARTS OF

Pay Grade: 16 \$

WORK RESULTS/PRODUCTS:

Complete, up-to-date pavement history files; completed reports; pavement management data entered into computer.

RESPONSIBILITY:

Timely and accurate completion of assigned work projects; scheduling and assigning work projects for self and subordinate staff.

AUTHORITY:

Approve or disapprove computer output; approve or disapprove work assignments completed by subordinate staff.

SKILLS APPLIED:

Skill in reducing and coding pavement management system data.

Skill in the operation of a variety of pavement performance test equipment.

Skill in analyzing and evaluating a variety of technical data.

Skill in interpersonal relations, as applied to contacts with other agency staff.

Class Code: 97397

SEARCHES FOR AND RETRIEVES INFORMATION FROM FILES, AND RESPONDS TO INFORMATIONAL REQUESTS REQUIRING SOME JUDGMENT OR DISCRETION REGARDING CURRENT AND SPECIFIC BUSINESS OF THE WORK SYSTEM, AS REFLECTED IN THE RECORDS; THIS COMMUNICATION MAY BE BY TELEPHONE OR BY DIRECT PERSONAL CONTACT.

RECORDS DATA FROM CONTROLLED FIELD OPERATIONS.

Assists in performing skid tests by turning water on

Contract No. 09-15

STATE BY DRIVING ON ROADS AND NOTING LOCATION, PHYSICAL FEATURES, BRIDGE TYPES, RIGHT-OF-WAY AND OTHER FEATURES. SORTS, SEPARATES AND CODES DATA IN ACCORDANCE WITH ESTABLISHED METHODS AND FORMAT. ENCODES DATA FOR COMPUTER USE IN ORDER TO PRODUCE ENGINEERING REPORTS. CORRECTS ERRORS IN COMPUTER OUTPUT DATA, AND RESUBMITS TO OPERATIONS SUPERVISOR FOR A RERUN.

MINIMUM QUALIFICATIONS:

One year of experience equivalent to the Transportation Materials Technician II.

Special Selection Factors: None.

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and off at the appropriate times and marking the test location on the paper. Operates the mu-meter by positioning the ink-pens, switching the machine on and inscribing road descriptions on the chart paper to indicate the location of the testing. Performs related work as required.

CONSTRUCTION TECHNICIAN III

IDEAL CANDIDATE SHALL BE ATI AND ACI CERTIFIED – IF THIS CERTIFICATION IS NOT OBTAINED, NO COMPENSATION FOR THIS CLASS WILL BE MADE

Performs a variety of skilled activities for field and office including preparing weekly time reports, reviewing certified payrolls and developing the monthly progress estimate, etc. In addition, prepares all final documents to be submitted to Field Reports.

Example of duties assigned to this classification is:

Inspection of major construction work, such as structures, structural steel, concrete and asphaltic concrete.

Documents all phases of project progress, including material and equipment use.

Documents force account work and possible claims.

Calculates land areas, earth forms, circular curves, material quantities and other quantitative measurements.

Two years experience as a Tech II or equivalent is required. Tech III Office / Administrative personnel must have successfully completed SATS, CPE, Force Accounts, Certified Payroll, and PEN training.

Or

Possess a degree in Business / Project Administration or Education with an emphasis in Math or Science and completion of all training classes listed above.

CONSTRUCTION TECHNICIAN III, ADOT EQUIVALENT (S6)

CANDIDATE SHALL BE ATI AND ACI CERTIFIED OR AN ENGINEERING STUDENT WITH 90 SEMESTER HOURS AND 6 MONTHS HIGHWAY CONSTRUCTION EXPERIENCE.

Performs a variety of highly skilled activities

- TRANSPORTATION CONSTRUCTION TECHNICIAN III
- TRANSPORTATION MATERIALS LABORATORY TECHNICIAN III

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED TO THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Construction Technician III Class Code: 34398
Organizations/Work Settings: Department of Transportation Class Established: 05/08/92
FLSA: NE Highway Division Revised: 09/07/00

WORK DESCRIPTION:

Serves as a senior level technician performing variety of highly skilled technical work related to highway construction activities. Activities include the inspection of minor construction items such as fence, grade, as subgrade materials; acting as survey party chief; performing a full range of laboratory tests on soils, aggregate, asphalt products, and other highway construction materials; or performing the most complex engineering office work; documents types and amount of materials used for each phase of construction.

WORK CONDITIONS:

Depending on area of assignment, may be exposed to extreme weather conditions; required to travel frequently and/or required to lift heavy materials; subject to hazards of moving traffic when working in construction areas.

SUPERVISION:

Works under general supervision of a project engineer or first-line supervisor and exercises some independent judgment within well established program parameters.

KNOWLEDGES APPLIED:

Methods, procedures, and techniques used in highway construction project inspection, survey, materials testing, and

Pay Grade: S6

WORK RESULTS/PRODUCTS:

Completed work assignments within assigned area(s) of construction; completed documentation of all phases of assignments

RESPONSIBILITY:

For timely and accurate completion of assigned projects; proper use, operation, maintenance, and repair of assigned equipment; scheduling and assigning work activities to assigned staff.

AUTHORITY:

To issue stop work orders when project materials and procedures are not in compliance with agency specifications; determine appropriate surveying or material testing techniques to be used.

SKILLS APPLIED:

Operating and maintaining of a variety of construction, survey, materials testing, and quality control equipment.

Analyzing and evaluating a wide variety of technical engineering data, including construction plans, field survey and quality control documentation, and completed material test results.

Interpreting and implementing standards; policies, procedures, and regulations applicable to the area of assignment.

Interpersonal relations, as applied to contacts with contractors, representatives of other governmental agencies, and other agency employees. Verbal and written communications.

documentation.
Federal, state statutes and agency standards, policies, and procedures applicable to the area(s) of assignment. Approved record keeping and documentation methods, procedures, and techniques. Materials and equipment used for highway construction purposes.
Principles and practices of office engineering, drafting, inspection, and mathematical calculations used in construction and land surveying.
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WORK ACTIVITIES (Characteristic Tasks) -
MAJOR and minor:
INSPECTS HIGHWAY CONSTRUCTION ON AN ONGOING BASIS TO ASSURE COMPLIANCE WITH CONTRACT AND WITH STATE AND FEDERAL STANDARDS, INSPECTIONS AND EXAMINATIONS ARE MADE OF MATERIALS, SURFACE CONDITIONS, PROPER TRACKING, STRUCTURAL FEATURES, AND OTHER RELEVANT FACTORS.
INSPECTS AND EXAMINES ENGINEERING PROJECT RECORDS, FIELD NOTES, COMPUTATIONS, AND OTHER DOCUMENTATION TO ASSURE THAT METHODS OF MEASUREMENT AND BASES FOR PAYMENT ARE IN ACCORDANCE WITH PROJECTED TRENDS, SPECIFICATIONS, SPECIAL PROJECTS, AND OTHER EXTRA WORK ORDERS.
CONFERES WITH CONSTRUCTION ENGINEERS AND CONTRACTORS REGARDING CONSTRUCTION IN PROGRESS AND ITS CONFORMANCE TO SPECIFICATIONS AND CONSTRUCTION PLANS, ANSWERS QUESTIONS, AND RESOLVES PROBLEMS. PERFORMS TESTS IN LABORATORY ON SOIL

Class Code: 34398

CONSULTS MANUAL, RULEBOOK CODES, OR REGULATIONS IN ORDER TO FIND EXACT REQUIRED COURSE OF ACTION, DETERMINATION OR AUTHORIZATION.
USING SURVEY INSTRUMENTS AND EQUIPMENT, PERFORMS LOCATION, STRATA, TOPOGRAPHIC, BOUNDARY, DRAINAGE, AND OTHER MEASUREMENTS AS REQUIRED IN THE CONSTRUCTION OF HIGHWAYS.

Logs or records all work flowing into the work unit, processed, or flowing out, in order to have accurate history of work or work performed.
Inspects sites on proposed highway facilities in order to review all factors relating to proposals and to confirm or verify data as presented.
Draws maps showing vegetation patterns, from notes based on visual observation.
Performs related work as required.

COMPOSITION, SURFACING MATERIAL
AGGREGATES, OIL AND WATER CONTENT,
EMBANKMENT COMPACTION, PLANT MIX DENSITY,
AND OTHER FACTORS AS REQUIRED.

MINIMUM QUALIFICATIONS:

Three years journey level experience in operating survey equipment; OR inspecting minor highway constructions projects, hot mix plants and concrete plants; OR performing administrative or advanced engineering and construction records maintenance and related duties; OR performing construction related materials testing/inspections. 90 semester hours applicable toward a Bachelor degree in engineering technology or closely related curriculum may substitute for one year of the required experience.

Special Selection Factors:

A medical/physical evaluation is required prior to appointment.

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STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Materials Laboratory Technician III Class Code: 97373
Organizations/Work Settings: Highways Division Class Established: 04/23/84
FLSA: NE Department of Transportation Revised: 10/02/87

Pay Grade: 17

WORK DESCRIPTION:

Supervises a staff of technicians engaged in inspection, sampling, and/or testing of highway construction materials on assigned projects; provides technical assistance to area project staff regarding materials sampling and testing techniques; conducts inspections of projects labs to ensure compliance with agency standards.

WORK CONDITIONS:

Frequent exposure to those hazards associated with laboratory testing; occasional exposure to those hazards associated with roadway construction.

SUPERVISION:

Works under the general direction of a first-line supervisor and exercises some independent judgment within agency standards.

KNOWLEDGES APPLIED:

Knowledge of materials inspection, sampling, and testing methods, procedures, and techniques used in highway construction. Knowledge of Federal and State statutes and agency standards, policies, and procedures applicable to the area of assignment. Knowledge of standard equipment and materials used for sampling and testing construction materials.

Knowledge of pertinent records and documentation required in the work unit.

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WORK RESULTS/PRODUCTS:

Completed testing of construction materials for use on the highway construction project; proper documentation of test results.

RESPONSIBILITY:

Timely and accurate completion of all materials testing assigned; scheduling and prioritizing work assignments within established time frames.

AUTHORITY:

Decisions affecting acceptance or rejection of materials; make recommendations for revisions to work unit standards, policies and procedures.

SKILLS APPLIED:

Skill in operation and maintenance of a variety of materials sampling and testing equipment used in the area of assignment.

Skill in reading and interpreting highway construction plans and specifications. Skill in the evaluation and interpretation of completed materials test results.

Skill in the operation of motorized vehicles.

Class Code: 97373

WORK ACTIVITIES (Characteristic Tasks) -
MAJOR and minor:

DEVICES A SCHEDULE OF WORK OR ITINERARY,
AGENDA, OR TIMETABLE OR ESTABLISHES
PRIORITIES FOR SELF AND SUBORDINATE-LEVEL
WORKERS ON A DAILY OR WEEKLY BASIS.
RESOLVES TECHNICAL OR WORK PROCEDURE
PROBLEMS AND QUESTIONS PRESENTED BY
SUBORDINATE-LEVEL WORKERS.
INSTRUCTS, GUIDES, AND COUNSELS
SUBORDINATE-LEVEL WORKERS IN CARRYING OUT A
VARIETY OF TASKS.
REVIEWS, VERIFIES, OR INSPECTS WORK OF
SUBORDINATE-LEVEL WORKERS, FOR QUALITY
CONTROL.
TRAINS NEW WORKERS ON THE JOB TO PERFORM
TASKS THAT WILL BECOME PART OF EVERYDAY
WORK ROUTINE.
CONSULTS MANUAL, RULE BOOK, CODES, OR
REGULATIONS IN ORDER TO FIND EXACT REQUIRED
COURSE OF ACTION, DETERMINATION, OR
AUTHORIZATION.
OPERATES CORE DRILLING MACHINE TO TAKE
MATERIALS SAMPLES FROM ROAD FOR ANALYSIS.
INSPECTS HIGHWAY CONSTRUCTION MATERIALS ON
AN ONGOING BASIS TO ASSURE COMPLIANCE WITH
CONTRACT AND WITH STATE AND FEDERAL
STANDARDS; INSPECTIONS AND EXAMINATIONS ARE
MADE OF MATERIALS, SURFACE CONDITION,
PROPER TRACKING, STRUCTURAL FEATURES, AND
OTHER RELEVANT FACTORS.

MINIMUM QUALIFICATIONS:

One year of experience equivalent to a Transportation Materials Laboratory Technician II; OR a
Bachelor of Science degree in civil engineering or a closely related field and six months of the
required experience.

Special Selection Factors:

PERFORMS TESTS IN LABORATORY ON SOIL COMPOSITION,
SURFACING MATERIAL AGGREGATES, OIL AND WATER CONTENT,
EMBANKMENT COMPACTION, PLANT MIX DENSITY, AND OTHER
FACTORS AS REQUIRED.

MAKES CALCULATIONS BASED ON OBSERVABLE DATA IN
LABORATORY.

Attends work unit staff meetings; gives and receives
information; participates in problem solving and
decision-making.

Confers with superior, presenting and resolving
difficult problems or questions, discussing plans and
actions to be taken, making decisions.

Gives and receives information requiring considerable
judgment and authority regarding current and specific
business of the work unit by telephone or direct
contact.

Using sieve scales and calculator, analyzes crushed
aggregates for gradation requirements by finding the
percentage of given aggregate sizes of materials
sampled.

Takes soil samples of construction project and then
analyzes samples in field laboratory to determine
compaction and moisture content.
Performs related work as required.

None.
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CONSTRUCTION TECHNICIAN IV

IDEAL CANDIDATE SHALL BE ATI AND ACI CERTIFIED – IF THIS CERTIFICATION IS NOT OBTAINED, NO COMPENSATION FOR THIS CLASS WILL BE MADE

Performs a variety of skilled activities for field and office including preparing weekly time reports, reviewing certified payrolls and developing the monthly progress estimate, etc. In addition, prepares all final documents to be submitted to Field Reports.

Exercises considerable independent judgement within general ADOT standards and guidelines.

Examples of duties assigned to this classification are:

Inspect highway construction on an ongoing basis to assure compliance with contract and in accordance with State and Federal standards.

Perform a variety of structural material tests and inspections.

Reviews construction plans and verified that these are in accordance with designated specifications and other requirements.

Participates in the preparation of completed work estimates, to determine compensation due contractor.

Examines and verifies numeric data and material specifications on project cost source documents, utilizing geometry and trigonometry calculations.

Supervises all work activities involved in construction projects, including survey, laboratory, and quality control work.

Recommends approval of proposed project changes.

Knowledge and skills required:

All knowledge and skills required of lower classifications.

Knowledge of the principles and practices of Civil Engineering as applied to the construction of state highways.

Skill in analyzing and evaluating a wide variety of highly technical engineering data, including construction plans, field survey and quality control documentation.

Skill in interpreting and implementing ADOT Standards, policies, procedures, and regulations.

Skill in interpersonal relations, as applied to contacts with contractors, representatives of other governmental jurisdictions, and other ADOT staff.

Two years as a Tech III or equivalent. Tech IV Office / Administrative personnel must have successfully completed SATS, CPE, Force Accounts, Certified Payroll, Business Writing, PEN training and be proficient in Power Point, Excel, Word, etc. OR Possess a degree in Business /

Project Administration or Education with an emphasis in Math or Science and completion of all training classes listed above.

CONSTRUCTION TECHNICIAN IV, ADOT EQUIVALENT (S7)

CANDIDATE SHALL BE ATI AND ACI CERTIFIED or BSCE.

Exercises considerable independent judgment within general ADOT standards and guidelines.

- TRANSPORTATION CONSTRUCTION TECH IV
- TRANSPORTATION ENGINEERING ASSOCIATE
- TRANSPORTATION ENGINEERING SURVEY SENIOR TECHNICIAN
- TRAINING OFFICER I

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED TO THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Construction Technician IV Class Code: 34399
Organizations/Work Settings: Department of Transportation Class Established: 05/08/92
Intermodal Transportation Division Revised: 09/07/00

FLSA: NE Pay Grade: S7

WORK DESCRIPTION:

Serves as a lead technician, under the direction of Engineer-In-Charge or designated representative, coordinates activities on highway construction project(s), including survey, quality control, inspection, project lab, and project office. Inspects and documents the most complex contract items, such as structures and concrete or asphalt pavement; performs related duties as necessary due to staffing requirements. Oversees the activity of a project lab performing project-related tests, and the work activities of a construction project office. May function as the primary contact for contractors, consultants, and ADOT employees on either a minor project or a segment of a major project. May resolve issues of conflict with contractors, initiate change orders, or force accounts. Schedules and reviews completed work of other employees and provides training.

WORK CONDITIONS:

Frequent travel. Considerable exposure to extreme weather conditions and hazardous traffic conditions depending upon assignment.

SUPERVISION:

Works under the general supervision of an Engineer-In-Charge of a project or representative. Assigns and directs work of project employees.

KNOWLEDGES APPLIED:

WORK RESULTS/PRODUCTS:

Highway construction projects completed in compliance with agency standards and specifications. Project documentation prepared and submitted within established timelines and conforming to accepted standards and practices. Materials tests and documents completed as required by applicable specifications and standards. Project-related surveys performed timely and to acceptable tolerances.

RESPONSIBILITY:

As delegated, for ensuring the safe completion of all work assigned personally and to subordinate employees. Timely completion of assignments to acceptable standards. Ensuring that materials, equipment, and procedures used comply with agency standards. Scheduling, assigning, and reviewing the daily work activities of other technicians

AUTHORITY:

As delegated within the area of assignment. Reject materials and workmanship not in compliance with agency specifications and plans. Approve or disapprove work performed under delegated direction.

SKILLS APPLIED:

Work scheduling and management.
Analysis and preparation of data.
Written and verbal communication.
Operation of equipment for completion of assigned duties.

Principles and practices of civil engineering related to the construction of state highway system roadways.
Construction inspection methods, procedures, and techniques.
Construction survey and materials testing and procedures.

Project-related contract, plans, specification and documentation
Verification and review procedures and practices.

Federal, state and agency standards, policies and practices.
Approved record-keeping and documentation procedures.

Materials and equipment used for highway construction and
Materials testing purposes.

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WORK ACTIVITIES (Characteristic Tasks) -

MAJOR and minor:

DEVELOP WORK SCHEDULES AND ASSIGN AND DIRECT
EMPLOYEES TO MEET OVERALL EXPECTATIONS
RELATED TO ASSIGNMENTS.

REVIEW TECHNICAL PROBLEMS AND DEVELOP
PROCEDURES AND RECOMMENDATIONS FOR RESOLUTION
OF ISSUES RELATED TO ASSIGNMENTS.

REVIEW, VERIFY AND APPROVE CALCULATIONS, TEST
RESULTS AND DOCUMENTATION FOR ASSIGNMENTS.
PERFORM INSPECTION, SURVEY, DOCUMENTATION,
AND TESTING AS REQUIRED FOR CONSTRUCTION
PROJECTS.

CONSULT WITH CONTRACTORS, LOCAL AGENCIES, AND
CITIZENS TO DEVELOP ALTERNATIVE SOLUTIONS TO
RESOLVE ISSUES IN CONFLICT AT THE LOWEST
LEVEL IN THE FIELD, AND PREPARE
RECOMMENDATIONS FOR PROJECT MANAGEMENT.
REVIEW CONSTRUCTION PLANS, SPECIFICATIONS,
AND DOCUMENTATION TO ENSURE COMPLIANCE WITH
FEDERAL, STATE, AND LOCAL REQUIREMENTS.
MINIMUM QUALIFICATIONS:

WORK ACTIVITIES (CONTINUED) Class Code:34399
PREPARE PROJECT RELATED DOCUMENTATION TO ENSURE
CONFORMANCE WITH ALL APPLICABLE LAWS, RULES,
REGULATIONS, AND STANDARDS.
PROVIDE TRAINING, COACHING, AND GUIDANCE TO EMPLOYEES
AS DIRECTED.

REVIEW AND VERIFY CONTRACTOR PAY QUANTITIES BEFORE
DOWNLOADING INTO CPE PROGRAM.

REVIEW AND/OR PREPARE CONTRACT DOCUMENTS RELATED TO
FORCE ACCOUNTS, CHANGE ORDERS, SUPPLEMENTAL
AGREEMENTS, AND FINANCIAL DOCUMENTATION FOR COMPLETED
PROJECTS.

Attend meetings and represent the Division as
directed.

Perform related work as required.

Four years of experience in operating survey equipment, inspecting minor highway construction projects, hot mix and concrete plants, performing administrative or advance engineering and construction records maintenance or related duties; or a Bachelors degree in Engineering Technology or closely related profession may be substitute for the required experience.

SPECIAL SELECTION FACTORS: Employment is contingent upon passing a physical examination.

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STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Engineering Associate Class Code: 75210
Organizations/Work Settings: Highways Division Class Established: 04/23/84
FLSA: NE Department of Transportation Revised: 01/01/94
Pay Grade: 18

WORK DESCRIPTION:

Performs a variety of engineering duties for a period not to exceed 24 months in any of the areas of the Highways Division including Highway Development, Highway Operations, Traffic Engineering, or the Districts as a training program for progression to entry/journey level classes in these areas.

WORK CONDITIONS:

May be required to travel and/or work outdoors occasionally, depending on area of assignment.

SUPERVISION:

Training will be provided in the area of assignment to provide the knowledges and skills required for advancement. Direct supervision will be provided during the training period.

KNOWLEDGES APPLIED:

Knowledge of principles and practices of civil engineering, as applied to the location, design, construction, and maintenance of a State highway system. Knowledge of agency organization and functions of the work units. Knowledge of Federal and State statutes and agency standards, rules, and regulations applicable to the area of assignment. Knowledge of agency safety practices and

WORK RESULTS/PRODUCTS:

Completed work projects applicable to the area of assignment.

RESPONSIBILITY:

Timely and accurate completion of all assigned projects; scheduling and prioritizing work projects within established time frames.

AUTHORITY:

Decisions that affect the work assignment as delegated by the supervisor.

SKILLS APPLIED:

Skill in the evaluation and interpretation of technical engineering records and reports. Skill in the operation and maintenance of a variety of equipment used in the area of assignment. Skill in interpersonal relations, as applied to contacts with other agency personnel.

procedures.

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WORK ACTIVITIES (Characteristic Tasks) -
MAJOR and minor:

INTEGRATED INTO WORK ROUTINE, OR IN
TIME SET ASIDE FOR TRAINING, ACQUIRES
KNOWLEDGE AND SKILLS NEEDED FOR
ADVANCEMENT TO JOURNEYMAN WORKER LEVEL
IN THE WORK SYSTEM.

ATTENDS PERIODIC WORKSHOPS OR TRAINING
SESSIONS TO IMPROVE WORKING KNOWLEDGE
AND SKILLS AT ELEMENTARY WORKING LEVEL
IN WORK SYSTEM.

READS AND STUDIES INSTRUCTIONAL OR

INFORMATIONAL MATERIAL IN ORDER TO
INCREASE AND EXPAND KNOWLEDGE BASE AT
ELEMENTARY WORKING LEVEL IN THE WORK
SYSTEM.

CALCULATES HORIZONTAL ALIGNMENT OF
ROADWAY FOR HIGHWAY CONSTRUCTION, FROM
PRELIMINARY SURVEY DATA; LAYS OUT FOR
DRAFTING

CALCULATES VERTICAL ALIGNMENT (GRADE
LINE) OF ROADWAY FOR HIGHWAY

CONSTRUCTION, FROM PRELIMINARY SURVEY
DATA; PLOTS AND CONNECTS POINTS OF
INTERSECTION TO CONSTRUCT ORIGINAL
GROUND AND CONSTRUCTION PROFILES.

DEVELOPS QUANTITY SUMMARIES OF BASIC
LEVEL FOR HIGHWAY CONSTRUCTION BID
ITEMS; SUBMITS FOR APPROVAL OF TEAM
LEADER OR SUPERVISOR.

MINIMUM QUALIFICATIONS:

Bachelor's degree from an accredited college or university with a major in civil engineering or closely related engineering field.
Special Selection Factors:

Class Code: 75210

CHECKS OR VERIFIES CALCULATIONS ON QUANTITY SUMMARIES
FOR HIGHWAY CONSTRUCTION BID ITEMS.

CALCULATES LAND AREAS, EARTH FORMS, CIRCULAR CURVES,
MATERIAL QUANTITIES, AND OTHER QUANTITATIVE
MEASUREMENTS, USING GEOMETRIC AND TRIGONOMETRIC
COMPUTATIONS.

EXAMINES AND VERIFIES NUMERIC DATA AND SPECIFICATIONS
ON SOURCE DOCUMENTS BY RECALCULATING COMPUTATIONS,
USING GEOMETRY OR TRIGONOMETRY.

INSPECTS CONSTRUCTION IN PROGRESS, TO ASSURE ITS
CONFORMANCE WITH SPECIFICATIONS, AGREEMENTS, AND
ESTABLISHED REQUIREMENTS.

REVIEWS CONSTRUCTION PLANS AND VERIFIES THAT THESE ARE
IN ACCORDANCE WITH DESIGNATED SPECIFICATIONS AND OTHER
REQUIREMENTS.

WRITES FINAL DESIGN PLAN FOR A HIGHWAY CONSTRUCTION
PROJECT, INCORPORATING SUMMARIES OF QUANTITY
COMPUTATIONS (MATERIALS AND SERVICES), CONTRACT
DOCUMENTS, AND DESIGN DETAILS.

Performs related work as required.

None.
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ARIZONA STATE PERSONNEL Class Code: 97313

FLSA: NE Pay Grade: 18

Transportation Survey Group

CLASS TITLE: Transportation Engineering Survey Senior Technician

CHARACTERISTIC OF THE CLASS:

Under the direction of a Transportation Engineering Survey Specialist, performs as a lead instrument person; prepares and surveys selected sites and assists in the supervision of a field survey crew and related duties.

EXAMPLES OF DUTIES:

Prepares and surveys assigned locations; directs and assists a field survey crew to locate existing survey monuments, sets traverse points for control, sets new survey monuments for use as control points, and paints and/or sets targets for aerial mapping; directs and assists a survey crew on multiple transportation construction projects; makes minor adjustments to the organizational structure, methods and workflow to accommodate changing conditions; verifies locations of construction project items in the field and in the plans; clarifies and interprets plans for subordinates, project field personnel and contractor personnel; provides advice to project personnel, keeping them informed of project construction plan changes; performs daily tasks by demonstrating proper procedures for using specialized equipment; operates a variety of survey equipment including Global Positioning System (GPS) Satellite Receiver, and electronic levels to establish horizontal and vertical control; compiles field survey books; prepares maps, diagrams, and sketches, annotates photographs and writes field survey notes; writes detailed descriptions of survey site control points and monuments for geodetic positions and later recovery; draws maps for each project, notes angles, distances, and calculates slopes; composes and completes a transit book to record all survey data; sets or directs others to set traffic control signals on job site for workers' safety; reviews subordinates' work in progress, or upon completion, to ensure the accuracy and completeness of computations and measurements; explains and demonstrates basic survey field methods to agency field personnel; and performs other related duties such as testing and maintaining survey equipment and operating and maintaining assigned vehicle(s).

KNOWLEDGE, SKILLS, AND ABILITIES:

Requires knowledge of construction, location, or photogrammetric surveying methods, procedures and techniques; uses and capabilities of a wide variety of survey equipment such as Global Positioning Systems, geodimeters, automatic and electronic levels and personal computers; mathematics as applied to reduce and adjust field and office survey calculations, and methods and procedures used in analyzing and evaluating a variety of surveying data; Federal and State statutes and agency standards, policies and procedures applicable to the area of assignment and agency safety standards, policies and procedures; principles of supervision, training, and leadership; and computer programs applicable to functional work unit.

Requires skill in the operation of survey instruments including electronic total stations, digital and automatic levels, Global Positioning Systems equipment and theodolites; reading and interpreting a variety of technical data including plans, specifications, topographic and plat maps and aerial photographs;

drafting topographic information, recordkeeping, entering data in electronic surveying equipment, field books and computers; oral and written communications, leadership and management; and interpersonal relations.

Requires ability to interpret a variety of technical data from maps, plats and aerial photographs, write field notes and use surveying equipment.

CC# 97313

Transportation Engineering Survey Senior Technician Page 2

MINIMUM QUALIFICATIONS

Four years of experience in surveying, including experience as a technician functioning as a lead worker performing activities on a survey crew. Other combinations of experience, education and/or technical training that meet the minimum requirement may be substituted for the required experience.

Must be capable of lifting and carrying 35 pounds.

A medical/physical evaluation is required prior to appointment.

National Institute for Certification in Engineering Technologies (NICET) Level III in Highway Construction or Surveying; OR National Society of Professional Surveyors (NSPS) Level III; OR registration as a Land Surveyor in Training in Arizona (LSIT) must be obtained before permanent status can be granted.

Revised: 8/18/97

<http://www.infoaccess.com/http://www.infoaccess.com/>

ARIZONA STATE PERSONNEL Class Code: 73621

FLSA: NE Pay Grade: 19 (Equivalent to S7)

Management Group

Personnel Management Series

CLASS TITLE: Training Officer I

CHARACTERISTICS OF THE CLASS:

Under direction, is responsible for professional work of average difficulty assisting in the development of overall training program objectives and coordinating the execution and evaluation of training activities on a department wide basis; and performs related work as required.

EXAMPLES OF DUTIES:

Participates in preparation, review and coordination of formalized in-service and out-service training programs; writes training manuals, special training materials and prepares special studies; provides technical supervision over training activities, prepares budget recommendations for meeting agency training requirements including handbooks, manuals, audiovisual aids and other related training materials; establishes and maintains training records; assists in training line and staff officials in training strategies and methods; keeps supervisor informed of progress on training objectives.

KNOWLEDGE, ABILITIES AND SKILLS:

Considerable knowledge of training strategies and methods; good knowledge of administrative and management theory and practice; good knowledge of the principles of employee training; good knowledge of the nature of the learning process; good knowledge of trends in employee training.

Ability to plan, organize, and coordinate the execution of training programs; ability to provide technical supervision in training matters; ability establish and maintain effective working relations with individuals, groups, and representatives of other organizations; ability to write training materials; and ability to speak and write effectively.

MINIMUM QUALIFICATIONS:

Bachelor's degree in business administration, public administration, a social or behavioral science or other acceptable field of study from an accredited college or university and one year experience in training; additional experience in training or other closely related personnel work may be substituted for the Bachelor's degree on a year-for-year basis.

Revised: October 1, 1998

<http://www.infoaccess.com/> <http://www.infoaccess.com/>

CONSTRUCTION TECHNICIAN (REGISTERED LAND SURVEYOR).
CANDIDATE SHALL BE A REGISTERED LAND SURVEYOR

Exercises considerable independent judgement within General ADOT Standards and Guidelines

Examples of duties assigned to this classification are:

Reviews construction plans and verified that these are in accordance with designated specifications and other requirements.

Participates in the preparation of completed work estimates to determine compensation due contractor.

Examines and verifies numeric data on project cost source documents utilizing geometry, and trigonometry calculations.

Supervises all survey work activities involved in construction projects to include locating Right of Markers and lines.

Knowledge and skills required:

Knowledge of the principles and practices of Civil Engineering as applied to the construction of state highways.

Skill in analyzing and evaluating a wide variety of highly technical engineering data including construction plans, and field survey.

Skill in interpreting and implementing ADOT Standards, policies, procedures and regulations.

Skill in interpersonal relations as applied to contacts with contractors, representatives of other governmental jurisdictions, and other ADOT Staff.

CONSTRUCTION TECHNICIAN V

IDEAL CANDIDATE SHALL BE ATI AND ACI CERTIFIED.

Acts as a technical/engineering specialist performing a variety of journey level engineering technician duties in the areas of highway location, design, maintenance, traffic engineering or construction may act as supervisor for lower level staff assigned to work unit. Exercises considerable independent judgment within general ADOT standards and guidelines.

Examples of duties assigned to this classification are:

Under the general direction of a registered engineer, supervises or inspects highway construction on an ongoing basis to assure compliance with contract and in accordance with State and Federal standard.

Inspects and examines engineering project records, field notes, computations and other documentation to assure that methods of measurement and basis for payment are in accordance with projected requirements, specifications, special provisions and extra work orders.

Reviews construction plans and verified that these are in accordance with designated specifications and other requirements to include calculating of land areas, earth forms, circular curves; materials quantities and other quantitative measurements, using geometric and trigonometric computations.

Participates in the preparation of completed work estimates, to determine compensation due contractor. Attends work unit staff meetings, gives and receives information; participates in problem solving and decision making.

May supervise and or inspect all work activities involved in construction projects, including survey, laboratory, and quality control work. Recommends approval of proposed projects changes.

Knowledge and skills required:

All knowledge and skills required of lower classifications.

Knowledge of the principles and practices of Civil Engineering as applied to the development, construction, and maintenance of state highway system.

Skill in analyzing and evaluating a wide variety of engineering data, including construction plans, field survey and quality control documentation.

Skill in researching, reading and interpreting a variety of technical engineering documents such as survey data, highway plans and computer printout.

Skill in oral and written communications to include interpersonal relations, as applied to contracts with contractors, representatives of other governmental jurisdictions, and other ADOT staff.

Skill in organizing and prioritizing work assignments.

CONSTRUCTION TECHNICIAN V, ADOT EQUIVALENT (S9)
CANDIDATE SHALL BE ATI AND ACI CERTIFIED OR ENGINEERING IN TRAINING
(E.I.T.) WITH 1 YEAR HIGHWAY EXPERIENCE

Project Supervisor reports directly to Resident Engineer.

- TRANSPORTATION ENGINEERING SPECIALIST
- TRANSPORTATION ENGINEERING SURVEY SPECIALIST
- TRAINING OFFICER II

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED
TO THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Engineering Specialist Class Code:
75261

Organizations/Work Settings: Highways Division Class Established:
04/23/84

Department of Transportation Revised: 10/01/96

FLSA: NE Pay Grade: 20 \$

WORK DESCRIPTION:

Acts as a technical specialist performing a variety of journey level engineering duties in the areas of highway location, design, maintenance, traffic engineering or construction; may act as lead worker for lower level staff assigned to the work unit.

WORK CONDITIONS:

No unusual work conditions.

SUPERVISION:

Works under the general supervision of a first-line supervisor and exercises some independent judgment within established program parameters, policies and procedures.

KNOWLEDGES APPLIED:

Knowledge of the principles and practices of civil engineering, as applied to the development, construction, and maintenance of State Highway systems.

Knowledge of computational and adjustment factors to be applied in the review and analysis of engineering data related to the area of assignment.

Knowledge of computer programs available for use within the work unit.

Knowledge of Federal and State statutes and agency standards, policies, and procedures applicable to the area of assignment.

WORK RESULTS/PRODUCTS:

Completed review of applicable engineering data; complete, current files of engineering data relating to the work unit.

RESPONSIBILITY:

Timely completion of assigned projects; may schedule and assign work to subordinate staff assigned to the work unit.

AUTHORITY:

Determines the accuracy and completeness of information under review; makes recommendations for approval or disapproval of work projects completed in the work unit.

SKILLS APPLIED:

Skill in analyzing and evaluating a wide variety of engineering data.

Skill in researching, reading and interpreting a variety of technical engineering documents such as survey data, highway plans and computer printouts.

Skill in oral and written communications.

Skill in organizing and prioritizing work assignments.

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WORK ACTIVITIES (Characteristic Tasks) - MAJOR and minor:
INSPECTS LAND IN FIELD AND COMPILES DETAILED DESCRIPTION OF LAND AND FACILITIES ON THE LAND.

INSPECTS AND EXAMINES ENGINEERING PROJECT RECORDS, FIELD NOTES, COMPUTATIONS AND OTHER DOCUMENTATION TO ASSURE THAT METHODS OF MEASUREMENT AND BASIS FOR PAYMENT ARE IN ACCORDANCE WITH PROJECTED TRENDS, SPECIFICATIONS, SPECIAL PROJECTS AND EXTRA WORK ORDERS.

ESTIMATES COSTS OF FUTURE CONSTRUCTION PROJECTS IN THE PLANNING PHASE, BASED ON CALCULATIONS FROM AVAILABLE DATA.

GATHERS DATA AND SUPPLIES DATA FOR COMPUTER INPUT IN ORDER TO RECEIVE PRECISE CALCULATIONS FOR DETAILED ENGINEERING DRAWINGS AND EVALUATIONS.

CALCULATES LAND AREAS, EARTH FORMS, CIRCULAR CURVES; MATERIAL QUANTITIES AND OTHER QUANTITATIVE MEASUREMENTS, USING GEOMETRIC AND TRIGONOMETRIC COMPUTATIONS.

EXAMINES AND VERIFIES NUMERIC DATA AND SPECIFICATIONS ON SOURCE DOCUMENTS BY RECALCULATING COMPUTATIONS, USING GEOMETRY OR TRIGONOMETRY.

REVIEWS AND ANALYZES ELECTRICAL BLUEPRINTS TO ENSURE CONFORMANCE OF STANDARDS AND SPECIFICATIONS OR TO PLAN ELECTRICAL INSTALLATIONS.

Class Code: 75261

OBTAINS RELIABLE MEASUREMENTS AND ENGINEERING DATA FOR USE IN ASSIGNED AREA.

PERFORMS A VARIETY OF ENGINEERING AND RELATED DUTIES IN ONE OF A NUMBER OF AREAS, INCLUDING LOCATION, DESIGN, CONSTRUCTION, MATERIALS, AND MAINTENANCE.

Attends work unit staff meetings; gives and receives information; participates in problem solving and decision making.

Confers with agency officials, staff members and representatives of other agencies to acquire information needed for immediate determinations or decisions.

Compiles information for and writes periodic reports on activities of a work unit.

Writes detailed reports based on research, investigation or inquiry, in prescribed format or on established forms provided.

Searches blueprints, maps, charts, records, and diagrams for specific information regarding current facilities buildings construction or past work done in a future work site.

Performs related work as required.

MINIMUM QUALIFICATIONS:

Bachelor of Science degree in civil engineering or a closely related field and two years experience equivalent to a Transportation Engineering Associate; OR three years experience at a Senior Transportation Engineering Technician level (grade 18 or above); OR completion of the Arizona Department of Transportation Engineer-In-Training (E.I.T.) program; OR registration as a professional civil engineer in the State of Arizona.

Special Selection Factors:

Some positions may require a B.S.C.E.

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<http://www.infoaccess.com/> <http://www.infoaccess.com/>

ARIZONA STATE PERSONNEL Class Code: 97308

FLSA: VA Pay Grade: 20 \$

Transportation Survey Group

CLASS TITLE: Transportation Engineering Survey Specialist

CHARACTERISTIC OF THE CLASS:

Under the direction of a Transportation Engineering Chief Surveyor, provides specialized surveying services in highway design and construction; OR may supervise a work unit or survey crew.

EXAMPLES OF DUTIES:

Reviews construction projects including details specific to the area of assignment, such as, the placement of structures, rights-of-way, earthwork quantities, signing, and traffic engineering features; reviews project plans and specifications and verifies accuracy and assures compliance; participates in project meetings and field reviews; makes recommendations to ensure plans are in compliance with design intent and established standards; formulates design alternatives; analyzes survey data and summarizes findings and recommendations; reviews project documentation, quantities and correspondence; coordinates with other project teams and agency personnel; provides technical instruction and assistance to project personnel; monitors progress and evaluates work assignments; evaluates consultants' work; participates in project progress meetings; plans and schedules work of assigned staff; long and short term project planning; establishes project deadlines and accomplishes agency goals.

KNOWLEDGE, SKILLS, AND ABILITIES:

Requires knowledge of the principles and practices of civil engineering, and geodetic and/or land surveying as applied to the development, design and construction of Transportation Systems, and/or control, location, and construction field surveys; uses and capabilities of a wide variety of survey equipment; computational and adjustment factors applied in the review and analysis of engineering and/or field surveying data related to the area of assignment; Federal and State statutes and agency standards, policies and procedures applicable to the area of assignment; public, agency and personal safety standards, policies, and procedures, and first aid techniques; and principles of supervision, training, and leadership.

Requires skill in leadership and management; oral and written communications; analyzing and

evaluating a wide variety of engineering and/or survey data; operation of a wide variety of

surveying equipment.

Requires ability to organize and prioritize; research, read and interpret technical engineering documents such as survey data, highway plans and computer printouts; and interpret technical data from maps, plans and aerial photographs, write field notes and use surveying equipment.

MINIMUM QUALIFICATIONS

Bachelor of Science in Civil Engineering or a closely related field; OR two years experience as a lead instrument person or lead worker assisting in the supervision of field survey crew; OR completion of the Arizona Department of Transportation Engineer-in-Training (E.I.T.) program. National Institute for Certification in Engineering Technologies (NICET) Level IV in Highway Construction or Surveying; OR National Society for Professional Surveyors (NSPS) Level IV; OR

registration as a Land Surveyor in Training (LSIT) must be obtained before permanent status can be granted.
Class Established: 08/18/97
<http://www.infoaccess.com/http://www.infoaccess.com/>

ARIZONA STATE PERSONNEL Class Code: 73622

FLSA: EX Pay Grade: 20 \$

Management Group

Personnel Management Series

CLASS TITLE: Training Officer II

CHARACTERISTICS OF THE CLASS:

Under general direction, is responsible for difficult professional work in employee development and training including establishing training requirements and evaluation of training; and performs related work as required.

EXAMPLES OF DUTIES:

Supervises training staff; confers with line and staff officials concerning training needs and establishes a total staff training and development plan; supervises research and modifies or develops improved training strategies and methods; confers with representatives of educational or training institutions for establishment of specific training programs, seminars or courses; supervises development of training manuals, acquisition and use of audiovisual equipment, handbooks, and other training materials; coordinates and participates in special training activities; prepares reports of training for administrative review.

KNOWLEDGE, ABILITIES AND SKILLS:

Considerable knowledge of the principles of employee training; considerable knowledge of the nature of the learning process; considerable knowledge of trends in employee training; considerable knowledge of training strategies and methods; considerable knowledge of administrative and management theory and practices.

Ability to plan, organize, and coordinate execution of training programs; ability to evaluate and improve training programs' materials and courses; ability to establish and maintain effective working relations with individuals, groups and representatives of diverse agencies; ability to supervise; ability to speak and write effectively.

MINIMUM QUALIFICATIONS:

Bachelor's degree in business or public administration, a social or behavioral science or other acceptable field from an accredited college or university and three years of experience in the training field; OR a Master's degree in one of the above fields and one year of the required experience; additional experience in training administration or a position involving responsibility for a formal training program may be substituted for the required education on a month-for-month basis.

Revised: October 1, 1998

<http://www.infoaccess.com/> <http://www.infoaccess.com/>

LANDSCAPE ARCHITECT

IDEAL CANDIDATE MUST BE REGISTERED IN THE STATE OF ARIZONA

Responsible for work of average difficulty in the design or supervision of design of landscaping projects in accordance with environmental planning concepts such as the preservation or enhancement of natural land features, and performs related work as required.

Knowledge, Abilities and Skills:

Considerable knowledge of principles, problems and methods used in landscape architecture and design, landscape construction and adaptability, requirements and use of plants, shrubs and trees, both native and cultivated in different landscaping situations; good knowledge of common plant diseases and pests and standard methods and materials used in their control and eradication; good knowledge of engineering as applied to landscaping features; good knowledge of Arizona soil conditions, soil preparation, planting, pruning techniques and tree surgery.

REGISTERED LANDSCAPE ARCHITECT, (T2 OR T3)
CANDIDATE MUST BE REGISTERED IN THE STATE OF ARIZONA

- REGISTERED LANDSCAPE ARCHITECT

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED
TO THIS SCOPE OF WORK

ARIZONA STATE PERSONNEL Class Code: 75561

FLSA: EX Pay Grade: 20 \$

Professional Engineering and Architecture Group
General Engineering and Architecture Series

CLASS TITLE: Landscape Architect

CHARACTERISTICS OF THE CLASS:

Under direction is responsible for work of average difficulty in the design or supervision of design of landscaping projects in accordance with environmental planning concepts such as the preservation or enhancement of natural land features, and performs related work as required.

EXAMPLES OF DUTIES:

Develops preliminary and final design, plans and specifications for landscaping projects in highway roadside development, scenic, recreational or historic park or site development; assists in establishing design standards for highway roadside rest areas and historical sites; supervises initial plantings follows through on maintenance programs, involving soil and moisture conditions, pruning practices, replacement, etc.; consults with persons within and without the department on matters involving project design development.

KNOWLEDGE, ABILITIES AND SKILLS:

Considerable knowledge of principles, problems and methods used in landscape architecture and design, landscape construction and adaptability, requirements and use of plants, shrubs and trees, both native and cultivated in different landscaping situations; good knowledge of common plant diseases and pests and standard methods and materials used in their control and eradication; good knowledge of engineering as applied to landscaping features; good knowledge of Arizona soil conditions, soil preparation, planting, pruning techniques and tree surgery.

Ability to select proper plant materials to achieve desired effects and prevent soil erosion; ability to prepare sketches and plans for beautification or other landscaping projects; ability to supervise the work of others.

MINIMUM QUALIFICATIONS:

Training and Experience:

Bachelor's degree in landscape architecture or a related field from an accredited college or university and four years experience in the field of landscape architecture; additional qualifying experience may be substituted for education on a month-for-month basis.

Licenses, Certificates or Registrations:

Registration as a landscape architect in the State of Arizona.

Revised: October 1, 1998

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RESIDENT ENGINEER

IDEAL CANDIDATE MUST BE A REGISTERED PROFESSIONAL CIVIL OR HIGHWAY ENGINEER.

Acts as a project engineer performing a variety of engineering duties in the areas of highway location, design, maintenance, traffic engineering or construction; may act as supervisor for lower level staff assigned to the work unit. Exercises considerable independent judgment within general ADOT standards and guidelines.

Examples of duties assigned to this classification are:
Supervises or inspects highway construction on an ongoing basis to assure compliance with contract and in accordance with State and Federal standards. Inspects and examines Engineering Project Records, Field Notes, Computations and other Documentation to assure that methods of measurement and basis for payment are in accordance with projected requirements, specifications, special provisions, and extra work orders. Reviews construction plans and verifies that these are in accordance with designated specifications and other requirements to include calculating of land areas, using geometric and trigonometric computations. Prepares completed work estimates to determine the compensation due the contractor. Attends work unit staff meetings, gives and receives information; participates in problem solving and decision making. Supervises and or inspects all work activities involved in construction projects, including survey, laboratory, and quality control work. Recommend approval of proposed project changes.

PROJECT ENGINEER / RESIDENT ENGINEER, (T2 OR T3)
CANDIDATE MUST BE PROFESSIONAL CIVIL OR HIGHWAY ENGINEER REGISTERED IN ARIZONA.

- TRANSPORTATION ENGINEER I
- TRANSPORTATION ENGINEER II

NOTE: REFER TO HUMAN RESOURCES POSITION SPECIFICATIONS ATTACHED
TO THIS SCOPE OF WORK

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Engineer I Class Code: 34110

Organizations/Work Settings: Department of Transportation - Highways Division Class Established:
11/22/93 FLSA: EX Revised: 10/01/96 Pay Grade: 22 \$

WORK DESCRIPTION:

Supervises the work of technical-level, non-supervisory staff involving engineering analysis, highway or structures design, maintenance, construction, or traffic engineering; OR acts as technical staff engineer engaged in the performance of senior journey-level professional engineering work; OR coordinates programs, or projects, and represents the agency before the public, other governmental agencies, consultants and/or contractors; OR acts as team leader of a professional staff.

WORK CONDITIONS: Depending on work location and assignment, may be required to work full time outside exposed to cold and heat; considerable travel away from home base may be required.

SUPERVISION:

Works under the general direction of a higher level engineer. Exercises considerable and significant independent judgment within established program parameters, policies and procedures.

KNOWLEDGES APPLIED:

Principles and practices of civil engineering as applied to design, development, construction and maintenance of the state highway system.
Federal and State statutes, agency standards, regulations, policies and procedures pertaining to area of assignment.

Safety and public relations practices.

Methods, procedures and techniques utilized in management of assigned resources.

Computer applications as they pertain to area of assignment.

Research techniques related to highly complex assignments.

WORK RESULTS/PRODUCTS:

Produces a variety of engineering related solutions and/or studies; completed project plans and specifications; completed construction projects; properly maintained highway systems; engineering related materials, reports and documents.

RESPONSIBILITY:

Schedules and assigns work activities to subordinate staff; develops detailed technical solutions, studies, documents and reports; timely and accurate completion of assigned projects.

AUTHORITY:

Approves or disapproves work related to specific area of assignment; assigns priorities as required for area of assignment.

SKILLS APPLIED:

Work supervision and leadership
Interpreting and analyzing a wide range of technical engineering data.
Oral and written communications.
Writing technical reports pertaining to assignment.

Interpersonal relations, as applied to contacts with subordinate personnel, other governmental agencies, contractors, consultants, and the public.

Developing and implementing appropriate standards procedures and priorities related to area of assignment.

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WORK ACTIVITIES (Characteristic Tasks) - MAJOR and minor:

ATTENDS SUPERVISORY OR WORK SYSTEM RELATED MEETINGS; GIVES AND RECEIVES INFORMATION; PARTICIPATES IN PROBLEM SOLVING AND DECISION MAKING.

DIRECTS, INSTRUCTS AND COUNSELS SUBORDINATE PERSONNEL AS REQUIRED.

REVIEWS WORK PRODUCTS FROM SUBORDINATES, CONSULTANTS OR OTHER PERSONNEL, PROVIDING TECHNICAL DIRECTION AND GUIDANCE.

CALCULATES LAND AREAS, EARTH WORK HORIZONTAL AND VERTICAL ALIGNMENTS; MATERIALS QUANTITIES AND OTHER QUANTITATIVE MEASUREMENTS, USING GEOMETRIC AND TRIGONOMETRIC COMPUTATIONS.

EXAMINES AND VERIFIES COMPLEX NUMERIC DATA, CONSTRUCTION PLANS AND SPECIFICATIONS.

CONFERS WITH REPRESENTATIVES OF OTHER AGENCIES, COMMUNITIES, CONSULTANTS, CONTRACTORS AND THE PUBLIC AS THE REPRESENTATIVE OF THE DEPARTMENT.

PERFORMS PREVENTIVE MAINTENANCE INSPECTIONS ON HIGHWAY STRUCTURES GIVING SPECIAL ATTENTION TO POINTS OF STRESS, FATIGUE AND LOADING.

WRITES DETAILED TECHNICAL REPORTS, AGREEMENTS, RESEARCH, INVESTIGATION, OR INQUIRY IN PRESCRIBED FORMAT.

REVIEWS, ANALYZES AND EVALUATES RESULTS OF TECHNICALLY DIFFICULT TESTS RELATING TO STRUCTURES, CONSTRUCTION AND DESIGN.

SEARCHES PLANS, MAPS, RECORDS, TECHNICAL JOURNALS FOR INFORMATION REGARDING CURRENT PROFESSIONAL PRACTICES AND PROCEDURES.

Class Code: 34110

Attends professional work seminars, meetings, conferences as a participant and representative of the department.

Analyzes, evaluates and reviews work procedures, methods and rules to make and develop work related practices.

Gives and receives information requiring judgment and knowledge regarding current and specific business practices.

Confers with supervisors to discuss work processes, incidents, problems and plans.

Pursues self improvement training to further professional development.

Reads and interprets federal, state and local codes and regulations in order to prepare or utilize reports used in work activity.

Performs related work as required.

MINIMUM QUALIFICATIONS:

Registration as a Professional Engineer in Civil Engineering or closely related field is appropriate to the area of assignment in the State of Arizona; OR eligibility for reciprocity in the State of Arizona.

Special Selection Factors:

None.
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<http://www.infoaccess.com/>

STATE OF ARIZONA POSITION SPECIFICATION

Class Title: Transportation Engineer II Class Code: 34111

Organizations/Work Settings: Department of Transportation - Highways Division Class Established: 11/23/93

FLSA: EX Revised: 10/01/96

Pay Grade: 23 \$

WORK DESCRIPTION:

Manages, through non-professional level subordinate supervisors/professional level team leaders, work involving engineering analysis, highway or structures design, traffic engineering, maintenance, construction, or traffic engineering, which may include supervision of administrative units or function; OR acts as one of a small number of technical staff experts engaged in professional engineering consultative work requiring possession of special knowledge and application of advanced engineering practices and procedures, advising management and field staff on the most difficult, complex and technically demanding engineering assignments, and representing the agency before the public and other agencies, consultants, and contractors.

WORK CONDITIONS:

Depending on work location and assignment, may be required to work full-time outside, thus exposed to cold and heat; considerable travel away from home base may be required.

SUPERVISION:

Works under the direction of a Service Manager, District Engineer or Transportation Engineer III within established policies and procedures. Exercises considerable and significant independent judgment.

KNOWLEDGES APPLIED:

Principles and practices of civil engineering as applied to design, development, construction and maintenance of the state highway system.
Federal and State statutes, agency standards, regulations, policies and procedures pertaining to area of assignment.

Safety practices and of public relations practices.

Methods, procedures and techniques utilized in management of assigned resources.

Computer applications that pertain to area of assignment.

Research techniques related to highly complex assignments.

WORK RESULTS/PRODUCTS:

Produces a variety of engineering solutions and/or studies; completed complex project plans and specifications; completed construction projects; properly maintained highway systems; engineering materials, reports and documents.

RESPONSIBILITY:

Schedules and assigns work activities to subordinate staff; develops detailed technical solutions, studies, documents and reports; timely and accurate completion of assigned projects.

AUTHORITY:

Approves or disapproves work related to specific area of assignment; prioritizes assigned tasks as required for area assignment.

SKILLS APPLIED:

Work management and leadership.
Interpreting and analyzing a wide range of highly technical engineering data.
Oral and written communications.
Writing technical reports pertaining to assignment.
Interpersonal relations, as applied to contacts with subordinate personnel, other governmental agencies, contractors, consultants, and the public.
Developing and implementing appropriate standards, procedures and priorities related to area of assignment.

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WORK ACTIVITIES (Characteristic Tasks) - MAJOR and minor:

DIRECTS, INSTRUCTS AND COUNSELS SUBORDINATE PERSONNEL AS REQUIRED.
REVIEWS WORK PRODUCTS FROM SUBORDINATES, CONSULTANTS OR OTHER PERSONNEL PROVIDING TECHNICAL DIRECTION AND GUIDANCE.
CALCULATES LAND AREAS, EARTH WORK, HORIZONTAL AND VERTICAL ALIGNMENTS; MATERIALS QUANTITIES AND OTHER QUANTITATIVE MEASUREMENTS, USING GEOMETRIC AND TRIGONOMETRIC COMPUTATIONS.
EXAMINES AND VERIFIES COMPLEX NUMERIC DATA, CONSTRUCTION PLANS AND SPECIFICATIONS.
CONFERES WITH CONSTRUCTION AND OTHER CONSTRUCTION RELATED PERSONNEL AND DESIGNERS REGARDING, CONSTRUCTION, SPECIFICATIONS, PLANS AND STANDARDS
CONFERES WITH REPRESENTATIVES OF TO OTHER AGENCIES, COMMUNITIES, CONSULTANTS, CONTRACTORS AND THE PUBLIC AS THE REPRESENTATIVE OF THE DEPARTMENT.
PERFORMS PREVENTATIVE MAINTENANCE INSPECTIONS ON HIGHWAY STRUCTURES GIVING SPECIAL ATTENTION TO POINTS OF STRESS, FATIGUE AND LOADING.
WRITES DETAILED TECHNICAL REPORTS, AGREEMENTS, RESEARCH, INVESTIGATION, OR INQUIRY IN PRESCRIBED FORMAT.
REVIEWS, ANALYZES AND EVALUATES RESULTS OF TECHNICALLY DIFFICULT TESTS RELATING TO STRUCTURES, CONSTRUCTION AND DESIGN.

ATTENDS SUPERVISORY OR WORK SYSTEM RELATED MEETINGS; GIVES AND RECEIVES INFORMATION; PARTICIPATES IN PROBLEM-SOLVING AND DECISION-MAKING.
ATTENDS PROFESSIONAL WORK SEMINARS, MEETINGS, CONFERENCES AS A PARTICIPANT AND REPRESENTATIVE OF THE DEPARTMENT.
SEARCHES PLANS, MAPS RECORDS, TECHNICAL JOURNALS FOR INFORMATION REGARDING CURRENT PROFESSIONAL PRACTICES AND PROCEDURES.

TESTIFIES IN COURT OR INFORMAL HEARINGS AS AN EXPERT WITNESS.
Analyzes, evaluates and reviews work procedures, methods and rules to make and develop work related practices
Gives and receives information requiring considerable judgment and knowledge regarding current and specific business practices.

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Confers with supervisors to discuss work processes, incidents, problems and plans.
Pursues self improvement training to other professional development.
Reads and interprets federal, state and local codes and regulations in order to prepare or utilize reports used in work activity.
performs related work as required.

MINIMUM QUALIFICATIONS:

Two years of experience equivalent to a Transportation Engineer I.

Special Selection Factors:

Registration as a Civil Engineer or closely related field which is appropriate for the area of assignment in the State of Arizona or proof of eligibility for reciprocity is required at the time of appointment.

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APPENDIX 'D'

Contract No. 09-15 Construction Inspection Certifications Matrix Showing Certifications Required to Receive Permanent Status to the Following Grades

| Construction Technician Name: | | | | Current Grade: | | | | | | | |
|---|---|---|--|---|--|---|--|--|--|---|--|
| Tr. Engineer Worker (S1) | | Tr. Construction Tech. I (S4) | | Tr. Construction Tech. II (S5) | | Tr. Construction Tech. III (S6) | | Tr. Construction Tech. IV (S7) | | Tr. Engineer Specialist (S9) | |
| | R | ATI Field Cert. | | ATI Field Cert CRT3400 | | ATI Field Cert CRT3400 | | ATI Field Cert CRT3400 | | ATI Field Cert CRT3400 | |
| | C | OR | | | | | | | | | |
| | R | ACI Field Cert CRT3400-3410 | | ACI Field Cert CRT3410 | | ACI Field Cert CRT3410 | | ACI Field Cert CRT3410 | | ACI Field Cert CRT3410 | |
| | C | | | | | | | | | | |
| | R | Earthwork Series Sampling and Test. Module 101 TCH3300 | | Earthwork Series Excavation/Embankment 102 TCH3301 | | Earthwork Series Subgrade/Base 104 TCH3303 | | Earthwork Series Coach one module (+ Constr. Man.) TCH3301C-03C | | Earthwork Series Coach Series (+ Constr. Man.) | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| | R | | | Pipe Module 103 TCH3302 | | Incidental Module 105 TCH3304 | | | | | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| | R | Concrete Series Sampling and Test. Module 201 TCH3306 | | Concrete Series Incidentals Module 202 TCH3307 | | Concrete Series Major Structures Module 204 TCH3309 | | Concrete Series Coach one module (+ Constr. Man.) TCH3306C-09C | | Concrete Series Coach Series (+ Constr. Man.) | |
| | T | | | | | | | | | | |
| | C | | | PCCP Module 203 TCH3308 | | | | | | | |
| | R | Bituminous Series Sampling and Test. Module 301 TCH3311 | | Bituminous Series Prime/Flush/Tack Module 302 TCH3312 | | Bituminous Series Plant Inspection Module 304 TCH3314 | | Bituminous Series Coach one module (+ Constr. Man.) TCH3311C-15C | | Bituminous Series Coach Series (+ Constr. Man.) | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| Daily Diary Documentation TCH3058 | R | Workmanship Checklists TCH3043 | | Seal Coat Module 303 TCH3313 | | Paving Module 305 TCH3315 | | | | | |
| Highway Plans Reading TCH3002 | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| Basic Work Zone Traffic Control TCH3004 | R | Force Account Documentation TCH3000 | | | | Construction Office Quantities TCH3012 | | Applied Const.Statistics TCH3010 | | Asphalt Unit Price Adj TCH3014 | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| Intro Applied Math TCH3015 | R | Pay Item Documentation TCH3001 | | Basic Surveying TCH3120 | | Adv Work Zone Traffic Control TCH3005 | | Coaching Techniques TCH3316 | | Supplemental Agreements TCH3039 | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| | R | Inter Applied Math TCH3016 | | Adv Applied Math TCH3017 | | Erosion and Pollution Control TCH3055 | | CPE Construction Progress Estimate TCH3041 | | CMP Procedures (CEMMS) TCH3048 | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| | R | Fast Inspection Forms (Pen-based) TCH3037 | | Roadside Safety Devices TCH3116 | | | | Cost Estimating TCH3011 | | Complete Project Final (1) | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |
| Introduction to Partnering GEN5179 | R | How to Conduct Partnering in the Field GEN5157 | | | | | | S.A.T.S TCH3038 | | | |
| | T | | | | | | | | | | |
| | C | | | | | | | | | | |

Note: Qualification to coach requires certification in the corresponding module.

Legend: Dates R = Registered T = Training Completed C = Passed Certification

(1) Federal Aid project must be greater than \$1 million with asphaltic concrete. Project final must be submitted with accurate & complete documentation with no financial errors. April 2, 2007

APPENDIX "D"
Construction Lab Technician
Certifications Matrix Showing Certifications Required to Receive Permanent Status to the Following Grades
Current Grade:

Laboratory Technician Name:

Current Grade:

| Tr. Engineer Worker (S1) | Tr. Construction Tech. I (S4) | Tr. Construction Tech. II (S5) | Tr. Construction Tech. III (S6) | Tr. Construction Tech. IV (S7) | Tr. Engineer Specialist (S9) |
|---|--|--|--|--|--|
| Proficiency in 50% of the tests Required for ATI Soils/Agg certification (All Labs) * | R ATI Soils/Agg certification (All Labs) CRT3401 | ATI Soils/Agg certification (All Labs) CRT3401 | ATI Soils/Agg certification (1,2,3,4,6,7) CRT3401 | ATI Soils/Agg certification (1,2,3,4,6,7) CRT3401 | ATI Soils/Agg certification (3,6) CRT3401 |
| Daily Diary Documentation (1) TCH3058 | R T C | ATI Asphalt Certification (1) CRT3402 | ATI Asphalt Certification (1,2,3,5,6) CRT3402 | ATI Asphalt Certification (1,2,3,5,6) CRT3402 | ATI Asphalt Certification (3,6) CRT3402 |
| | R T C | ACI Concrete Strength Testing Certification (1) CRT3412 | ACI Concrete Strength Testing Certification (1,2,6,7) CRT3412 | ACI Concrete Strength Testing Certification (1,2,6,7) CRT3412 | ACI Concrete Strength Testing Certification (6) CRT3412 |
| | R T C | ACI Field Technician Grade 1 Certification (1) CRT3410 | ACI Field Technician Grade 1 Certification (1,6,7) CRT3410 | ACI Field Technician Grade 1 Certification (1,2,6,7) CRT3410 | ACI Field Technician Grade 1 Certification (6) CRT3410 |
| Introductory Applied Math (All Labs) TCH3015 | R T C | Advanced Applied Math (All Labs) TCH3017 | Demonstrate Proficiency in PG Binder Testing (5) CRT3410 | ATI Field Technician Certification (2,6) CRT3400 | ATI Field Technician Certification (6) CRT3400 |
| Basic Work Zone Safety (All Labs) TCH3004 | R T C | Advanced Work Zone Safety (All Labs) TCH3005 | Demonstrate Proficiency in Asphalt Rubber Testing (5) | | |
| | R T C | | Demonstrate Proficiency in Asphalt Emulsion Testing (5) | Applied Construction Statistics (All Labs) TCH3010 | |
| | R T C | | Coaching Techniques (All Labs) TCH3316 | Coach for 2 Certifications (All Labs) | Coach All Applicable Certifications (All Labs) |

Note: All elements in prior grades required to receive permanent status. (if applicable).

Qualification to coach requires certification in corresponding module. * Proficiency required in the following test procedures:

R = Registered T = Training Completed C = Passed Certification for the S1 classification:
April 2, 2007

Survey Technician
Certification Matrix Showing Certifications Required to Promote to the Following Grades:

| Survey Technician Name: | | | | Current Grade: | | | | Tr. Engr. Survey Spec. | |
|---|--|-------------------------------|--|-------------------------------------|--|---------------------------------------|--|--|--|
| Tr. Engineer Worker | | Tr. Construction Tech. I (S4) | | Tr. Engr. Survey Tech. (S5) | | Tr. Engr. Senior Survey Tech. (S7) | | Tr. Engr. Survey Spec. (S9) | |
| (S1) | | | | | | | | | |
| | | | NSPS Level I Certification CRT3020 | NSPS Level II Certification CRT3022 | | NSPS Level III Certification CRT3025 | | LSIT (AZ) or NSPS Level IV Certification CRT3027 | |
| | | | Survey 101 (P) * TCH3121 | Survey 201 (P) ** TCH3125 | | Survey 301 (P) *** TCH3129 | | Coach Survey 100 series | |
| | | | Survey 102 (P) * TCH3122 | Survey 202 (P) ** TCH3126 | | Survey 302 (P) *** TCH3130 | | Coach Survey 200 series | |
| | | | Survey 103 (P) * TCH3123 | Survey 203 (P) ** TCH3127 | | Survey 303 (P) *** TCH3131 | | Coach Survey 300 series | |
| | | | Survey 104 (P) * TCH3124 | Survey 204 (P) ** TCH3128 | | Survey 304 (P) *** TCH3132 | | Coaching Techniques TCH3316 | |
| | | | | | | Microstation Intro TCH3026 | | Intermediate Microstation TCH3027 | |
| | | | Introduction to Partnering GEN5179 | | | InRoads / Survey Select Intro TCH3030 | | Intermediate InRoads / Survey Select TCH3249 | |
| | | | | | | | | | |
| Basic Surveying TCH3120 | | | | | | | | Excel Advanced GEN1308 | |
| Highway Plans Reading TCH3002 | | | Pay Item Documentation TCH3001 | Excel Intro. GEN1306 | | Excel Intermediate GEN1307 | | | |
| Daily Diary Documentation TCH3058 | | | | Intro. To Word GEN1316 | | Intermediate Word GEN1317 | | Advanced Word GEN1318 | |
| Introductory Applied Math TCH3015 | | | Intermediate Applied Math TCH3016 | Advanced Applied Math TCH3017 | | | | | |
| Basic Work Zone Traffic Control TCH3004 | | | Advanced Work Zone Traffic Control TCH3005 | Intro to Access GEN1301 | | Intermediate Access GEN1302 | | Advanced Access GEN1303 | |

[illegible]

Note: Qualification to coach requires certification in corresponding module.
Legend: Dates R = Registered T = Training Completed C = Passed Certification N/A = Not Available (P) = Prerequisite Required
 Introductory Applied Math, ** Intermediate Applied Math, *** Advanced Applied Math.
 April 2, 2007

APPENDIX 'D'

Current Grade: _____

| Tr. Engineer Worker (S1) | | | Tr. Construction Tech. I (S4) | | Tr. Construction Tech. II (S5) | | Tr. Construction Tech. III (S6) | | Tr. Construction Tech. IV (S7) | |
|--|---|---|---|--|--|--|---------------------------------|--|--------------------------------|--|
| Word Introduction: Creating Documents GEN 1315 | R | Powerful Business Writing GEN 5170 | Access Introduction: GEN 1301 | Word Intermediate GEN 1315B | Word 97 Merge, Tables and Forms GEN 1316 | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |
| Excel Introduction: Creating Spreadsheets GEN 1305 | R | **Advantage GEN 1200 | **HRIS Training GEN 1242 | Excel Intermediate GEN 1305B | Excel Charting GEN 1306 | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |
| Intro to Outlook 2000 GEN 1335 | R | Pay Item Documentation TCH 3001 | ZM, Communication Skills for Employees GEN 5200-5212 (3 Days) | Construction Office Qlys TCH 3012 | Delivering Exceptional Customer Service GEN 5152 | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |
| **Payroll (BTS) GEN 1230 | R | Introductory Applied Math TCH 3015 | Intermediate Applied Math TCH 3016 | Advanced Applied Math TCH 3017 | Cost Estimating TCH 3011 | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |
| **2-Way Radio TCH 4808 | R | Certified Payroll Workshop TCH3046 | Highway Plans Reading TCH 3002 | Asphalt Unit Price Adjustment TCH 3014 | Complete Project Final (I) | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |
| Daily Diary Documentation TCH3058 | R | Construction Progress Estimate (CPE) TCH 3041 | Force Account Documentation TCH 3000 | Coaching Techniques TCH 3316 | Construction Management Program (CMP) (CEMMS) TCH 3040 | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |
| | R | | | | S.A.T.S Supplemental Agreements Tracking System TCH 3038 | | | | | |
| | T | | | | | | | | | |
| | C | | | | | | | | | |
| | | | | | | | | | | |

Legend: Dates R = Registered T = Training Completed C = Passed Certification N/A = Not Available

**** Not required for Field Reports**

(1) Federal Aid Project must be greater than \$1 million with asphalt concrete. Project final submitted with accurate and complete documentation and no financial errors.

April 2, 2007

APPENDIX 'D'

Traffic Signal and Lighting

Certifications Matrix Showing Certifications Required to Receive Permanent Status to the Following Grades

| Technician Name: | | | | Current Grade: | | | | | | |
|--------------------------|--|-------------------------------|--|----------------|---|--|---|--|---|--|
| Tr. Engineer Worker (S1) | | Tr. Construction Tech. I (S4) | Traffic Signal & Lighting Technician I (S5) | | Traffic Signal & Lighting Technician II (S6) | | Traffic Signal & Lighting Crew Supervisor (S7) | | Traffic Signal & Lighting Section Manager (S9) | |
| | | | IMSA Work Zone Safety Specialist CRT3180 | R T C | IMSA Work Zone Safety Specialist CRT3180 | | IMSA Work Zone Safety Specialist CRT3180 | | IMSA Work Zone Safety Specialist CRT3180 | |
| | | | IMSA Traffic Signal Technician Level I CRT3181 | R T C | IMSA Traffic Signal Technician Level I CRT3181 or IMSA Traffic Signal Inspector CRT3183 | | IMSA Traffic Signal Technician Level I CRT3181 | | IMSA Traffic Signal Technician Level I CRT3181 | |
| | | | **Daily Diary Documentation TCH3058 | R T C | | | IMSA Traffic Signal Technician Level II CRT3182B | | IMSA Traffic Signal Technician Level II CRT3182B | |
| | | | Basic Work Zone Traffic Control TCH3004 | R T C | Advanced Work Zone Traffic Control TCH3005 | | IMSA Traffic Signal Electrician Level II CRT3182A | | IMSA Traffic Signal Electrician Level II CRT3182A | |
| | | | Introduction to Partnering GEN5179 | R T C | **Fast Inspection Forms (Pen Based Operations) TCH3037 | | **Force Account Documentation TCH3000 | | | |
| | | | Introductory Applied Math TCH3015 | R T C | Intermediate Applied Math TCH3016 | | Advanced Applied Math TCH3017 | | **Applied Construction Statistics TCH3010 | |
| | | | Highway Plans Reading TCH3002 | R T C | **Pay Item Documentation TCH3001 | | **Cost Estimating TCH3011 | | **Supplemental Agreements TCH3039 | |

S1 and S4 are not used in this series

Legend: Dates R = Registered T = Training Completed C = Passed Certification

**Not required for maintenance only personnel

Landscape Inspection

Landscape Architecture

Current Grade:

| Construction Technician Name: | | | Current Grade: | | | | Tr. Engineer Specialist (S9) | | |
|---------------------------------|---|--|----------------|---|-------|---------------------------------------|------------------------------|--|--|
| Tr. Engineer Worker (S1) | | Tr. Construction Tech. I (S4) | | Tr. Construction Tech. II (S5) | | Tr. Construction Tech. III (S6) | | Tr. Construction Tech. IV (S7) | |
| | R | ATI Field Cert. | | ATI Field Certification | | ATI Field Certification | | ATI Field Certification | ATI Field Certification |
| | C | OR | | ACI Field Certification | | ACI Field Certification | | ACI Field Certification | ACI Field Certification |
| | R | ACI Field Certification | | Earthwork Series Excavation/ Embankment 102 | | Earthwork Series Subgrade/ Base 104 | | Earthwork Series Coach one module (+ Constr. Man.) | Earthwork Series Coach Series (+ Constr. Man.) |
| | R | Earthwork Series Sampling and Test. Module 101 | | Pipe Module 103 | | Incidental Modules 105 | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | Concrete Series Sampling and Test. Module 201 | | Concrete Series Incidentals Module 202 | | | | Concrete Series Coach one module (+ Constr. Man.) | Concrete Series Coach Series (+ Constr. Man.) |
| Highway Plans Reading | T | | | Irrigation Series Basic Module _01 | | Irrigation Series Advanced Module _02 | | Irrigation Series Coach one module (+ Constr. Man.) | Irrigation Series Coach Series (+ Constr. Man.) |
| | R | | | Seeding | | | | Landscaping Series Coach one module (+ Constr. Man.) | Landscaping Series Coach Series (+ Constr. Man.) |
| | T | Landscaping Series Basic Module _01 | 6/08 | | 12/07 | Advanced Module _02 | 12/08 | | |
| | C | *Pay Item Documentation | | *Force Account Documentation | | *Construction Office Quantities | | *Applied Construction Statistics | *Supplemental Agreements |
| | R | | | Basic Surveying | | Advanced Work Zone Traffic Control | | *CPE Construction Progress Estimate | *CMP Procedures (CEMMS) |
| | T | *Fast Inspection Forms (Pen-based Operation) | | | | | | Cost Estimating | |
| | C | Intermediate Applied Math | | Advanced Applied Math | | | | | |
| | R | | | Roadside Safety Devices | | | | Coaching Techniques | |
| | T | | | | | | | | |
| | C | | | Introduction to Partnering | | | | | |
| Basic Work Zone Traffic Control | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | C | | | | | | | | |
| Introductory Applied Math | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | C | | | | | | | | |
| Daily Diary Documentation | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | R | | | | | | | | |
| | T | | | | | | | | |
| | C | | | | | | | | |
| | C | | | | | | | | |

Note: Qualification to coach requires certification in the corresponding module.

(Dates shown are targets for training and certification availability).

Legend: Dates R = Registered T = Training Completed C = Passed Certification

***Not required for Maintenance only employees**

April 2, 2007

Transportation Engineering Associate (TEA)
Matrix showing Certifications Required to be Granted Permanent Status to TEA

APPENDIX "D"

Current Grade

| Name | | | TEAs with BCSE assigned to or wanting to be assigned to Construction Orgs: These classes are required to be completed within 4 years from the date of hire. An asterisk (*) indicates specific classes that it is desirable to take within the first two years for personnel wanting to be assigned to Construction Orgs. | | | | | | | | | |
|------------------------------------|---|---|--|-------------------------------|---------------------------|---------------------------|--------------------------|------------------|------------|------------------|-------------------|--|
| Highway Plans Reading | R | T | C | Earthwork Series | | Earthwork Series | | Earthwork Series | | Earthwork Series | | Teach one the following: |
| | | | | Sampling and Test, Module 101 | Excavation/Embankment 102 | Excavation/Embankment 102 | Subgrade/Base Module 104 | Earthwork Series | Incidental | Concrete Series | Bituminous Series | |
| Pay Item Documentation | R | T | C | | | | | | | | | Earthwork Series Concrete Series Bituminous Series |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Basic Work Zone Traffic Control | R | T | C | | | | | | | | | Concrete Series Major Structures Module 204 |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Roadside Safety Devices | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Daily Diary Documentation | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Introduction to Partnering | R | T | C | | | | | | | | | Bituminous Series Paving Module 305 |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Advanced Work Zone Traffic Control | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Cost Estimating | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |
| Supplemental Agreements | R | T | C | | | | | | | | | Signing Inspection |
| | R | T | C | | | | | | | | | |
| | R | T | C | | | | | | | | | |

Note: Qualification to teach requires certification in the corresponding module.

Legend: Dates R = Registered T = Training Completed C = Passed Certification (Dates shown are targets for training and certification availability).

March 28, 2007

SECTION X
ADVANCE AGREEMENT CHECKLIST

ARIZONA DEPARTMENT OF TRANSPORTATION

ENGINEERING CONSULTANTS SECTION

ADVANCE AGREEMENT CHECK LIST (See FAR 31.109)

1. Direct Labor

Direct labor will be billed at actual costs, as defined in FAR 31.001, unless a specific classification or individual's billing rate is capped. However, for partners, sole proprietors and Limited Liability Companies (LLCs) where owners may not be paid an hourly wage or salary, direct labor will be billed at rates agreed to by ADOT. (Also see **Compensation for Personal Services**.)

Only the pay rates of those employees who will likely be expected to be directly involved on the Project stated in the Contract can be used in developing cost proposal rates.

2. Home Office Allocations or Similar Allocated Costs

FAR 31.109(h)(14) states, "General and administrative costs (e.g., corporate, division, or branch allocations) attributable to the general management, supervision, and conduct of the contractor's business as a whole." These costs may represent a significant portion of indirect (Overhead) costs.

All Cost Principles addressed in the Contract Cost Allowability Guidelines and Policies ("CCAGP") must be followed by a Consultant/Subconsultant's home office, division or other related entity that allocates costs to the Consultant/Subconsultant (see the CCAGP **A.5. Allocability of Costs**). These costs should be identified and agreed to in advance as to the amounts considered reasonable and allocable to ADOT contracts.

3. Overhead Rates by Type of Engineering Discipline or Specialty

Firms qualified to provide more than one engineering discipline or specialty must be able to substantiate separate overhead rates for each of the following disciplines:

- Construction Administration (CEI)
- Design
- Geotech
- Supplemental Services

4. Compensation for Personal Services

See CCAGP B.31.205-6 Compensation for Personal Services.

Compensation for personal services is normally the most significant element of indirect cost. The components of compensation for personal services should be identified and the amounts to be considered reasonable and allocable to ADOT contracts agreed to in advance.

In particular, the following elements of Compensation for Personal Services, if applicable, should be agreed to in advance:

- Both the reasonableness and allocability of compensation paid to partners, sole proprietors, or owners and family members of same, along with highly compensated employees.
- Allowability of bonuses. Under above reference, see 2. *Bonuses and incentive compensation.*

5. Cost of Money

If this item is requested, it must be properly proposed as a separate line item in the Derivation of Costs Proposal, and documented in accordance with 31.205-10. Also see FAR 31.201-1.

6. Bid and Proposal Costs (see FAR 31.205-18) and Selling/Marketing Costs (see FAR 31.205-38)

Bid and proposal costs and selling/marketing costs will be looked at carefully in the preaward review. Any unreasonable and/or unallocable costs being claimed will be disallowed. Adequate documentation will be expected for such claimed costs. Unallowable portions will be expected to be properly identified.

7. Other Direct Costs

It will be expected that Other Direct Costs (any expense/cost other than Direct Labor and Subconsultants) be included in the Overhead cost pool. If a Consultant/Subconsultant proposes Other Direct Costs, it will need to obtain prior approval of its accounting methods by ADOT's Office of Audit & Analysis—External Audit Team before it can include such costs in its Derivation of Costs Proposal submitted to ADOT's Engineering Consultants Section.

7. Other Direct Costs, continued

The list of incidental costs that follow should not be considered to be "all-inclusive". However, the items noted below are specific costs ADOT has identified as being onerous to deal with as Other Direct Costs. Most Consultants/Subconsultants already include such costs in Overhead cost pools.

- Audio/Video equipment and supplies, including VCRs and video cameras
- Cell phones
- Copy machines
- Densometer
- FAX
- Internet/electronic mail
- Mileage for company vehicles
- Office space considered to be "extra". (Exception is for Construction Administration field office.)
- Postage and/or Courier
- Survey supplies
- Telephone calls--both local and long distant

Additional points to consider:

- If a Consultant/Subconsultant does not have separate cost pools (for example CADD and Reproduction Costs), ADOT believes it will be very difficult to adequately substantiate such costs.
- Be aware that if the costs of specific services normally provided by a Consultant/Subconsultant are included in its Overhead Cost Pool, then any unexpected costs that may be incurred to provide those same services must be charged to an Overhead cost account. Any questions regarding this matter should be directed by ADOT's Office of Audit & Analysis—External Audit Team.

8. Incidental Costs Which Should Normally Be Charged Directly to the Contract

- Lease/rental of vehicles or other specialty equipment. (This cost should be substantiated by evidence of appropriate bidding including support for the bid accepted.)
- Mobilization of equipment.
- Travel and Lodging, including per diem, following ADOT's Travel Authorization Policy.
- Special reproduction costs provided by outside vendors

SECTION XI
BOILER PLATE CONTRACT

Contract No.:09-15
TRACS No.:H688101C
Project No.: 017 MA224
TRACS No.: H760401C
Project No.: 017 MA229
A.G. Contract No: KR94-1408ALS

CONSULTANT CONTRACT

This CONTRACT is made and entered into on _____, 20____ by and between the State of Arizona, Arizona Department of Transportation, Intermodal Transportation Division, acting by and through the Director, hereinafter called STATE, and

(Consultants Name and Address Inserted Here)

hereinafter called the CONSULTANT.

The Description and Location of the CONTRACT and related project(s) are as follows:

Description:

Full Service Construction Administration for
Reconstruction
I-17 – SR74 to Anthem Way

Pavement Preservation
I-17/Anthem Way to New River Road

Location:

Phoenix-Cordes Junction Highway between MP 224.36 (SR74/Carefree Highway)
and MP 229.17 (Anthem Way)

and

Phoenix-Cordes Junction Highway between MP 229.17 (Anthem Way)
and MP 232.79 (New River Road)

RECITALS

1. The STATE desires that construction administration be prepared for the above location. The trained personnel needed for the CONTRACT and related project(s) are not currently available within its own organization.
2. The CONSULTANT firm with its principals and employees is considered to be qualified and otherwise capable of performing the work required by this contract in the time allotted.

AGREEMENT

Therefore, in consideration of these premises and of the mutual clauses and agreements herein contained, and the faithful performance thereof, the CONSULTANT and the STATE contract and agree:

2.01 SCOPE OF WORK

The CONSULTANT shall perform engineering services for the satisfactory completion of the CONTRACT and related project(s) as detailed and described in the following Scope of Work dated October 2008 which is considered to be a part of this CONTRACT.

3.01 CONTRACT SCHEDULE AND COMPLETION DATE

Work on the CONTRACT and related project(s) is scheduled to commence on _____. Work is to be completed within 440 calendar days from notice to proceed for an estimated completion date of _____, 20____. The STATE assumes no liability for work performed or costs incurred prior to the beginning date or subsequent to the CONTRACT completion date. Extensions of time allowed for completing the CONTRACT may be granted under appropriate circumstances.

3.02 CONSULTANTS COMPENSATION - COST PLUS FIXED FEE - SINGLE PHASE

1. The Cost Plus Fixed fee method of compensation for CONSULTANT'S services shall be used.
 - a. CONSULTANT'S total compensation for work on the CONTRACT and related project(s) shall not exceed the sum of \$_____ plus approved adjustments, and shall consist of two parts:
 - (1) All the allowable costs incurred as hereinbelow defined.
 - (2) A fixed fee for rendering of the professional services herein contemplated.
 - b. The total allowable costs of the CONSULTANT are estimated to be \$_____ which shall not be exceeded by the CONSULTANT without prior written approval of the STATE.
 - c. The fixed fee portion of CONSULTANT'S compensation for satisfactory completion of the CONTRACT and related project(s) shall be \$_____.
2. "Costs" as used in this context shall be construed to mean the CONSULTANT'S actual, reasonable costs, subject to any limitation set forth in this CONTRACT, attributable and properly applicable to the conduct of the CONSULTANT'S business in the performance of this CONTRACT in accordance with procedures as set forth in Chapter 1 of the Federal Acquisitions Regulations System, 48 CFR 31.2, and any other mutually agreed upon policies or regulations, as appropriate. Costs for each subcategory (line item) shall not exceed the allowable rates as set forth on the DERIVATION OF COST PROPOSAL located in the SCOPE OF WORK section, Appendix E of the CONTRACT, or are approved by contract modification, or by Administrative Determination Letter, as applicable. Such costs shall be allocated to the following categories and respective subcategories and may include, but are not necessarily limited to:
 - a. Direct Labor

Gross Salaries and/or wages paid to employees for work on the CONTRACT and related project(s), for time actually spent by CONSULTANT'S employees in direct productive efforts. Regarding CONSULTANT'S employees who charge their time to projects, their non-project pay, such as holiday pay, vacation pay, or any other

form of indirect pay which is included in the employees' gross wages, will not be charged as direct labor to the CONTRACT or to related project(s). Non-project pay is to be included in 3.02 2.b.(2). Also payments to individuals other than the CONSULTANT'S employees are specifically excluded as direct labor costs. Payment of premium overtime (i.e., time and a-half or double time, over and above the normal 40 hour work week) must have the prior written approval of the STATE. If payment of premium overtime is approved, it will be treated as Other Direct Costs.

b. Indirect Costs (Overhead)

- (1) Applicable to straight time portion of Direct Labor only, as defined in 3.02 2. a..
- (2) Indirect labor which includes non-project pay to CONSULTANT'S employees who normally charge their time to projects, salaries and wages paid to support staff such as secretarial, clerical and custodial, plus managerial employees whose time is not considered chargeable project time to this CONTRACT and related project(s) or any other specific project of the CONSULTANT.
- (3) Payroll costs-taxes and fringe benefits such as matching funds or employer's contributions paid for employee's social security, unemployment compensation, worker's compensation insurance, medical/dental life or disability insurance, pension plans, dependent care or medical expense reimbursement accounts, or similar employee benefits.
- (4) Normal operating costs, including but not limited to, reasonable office rental or depreciation expense, repairs, maintenance, parking, janitorial, supplies, telephone and utilities for CONSULTANT'S facilities unless specifically waived by the STATE.
- (5) Payment to the CONSULTANT for Indirect Costs shall be made pursuant to Federal Acquisition Regulation, 48 CFR Chapter 1 Part 31.2, and ADOT Contract Cost Allowability Guidelines and Policies as of August 28, 1998. During the period of the CONTRACT, partial payments will include payments for indirect costs at a provisional rate established by the pre-negotiation review by the audit and analysis office of the department. The Negotiated Provisional overhead rate of _____% will be set until receipt of the Pre-Negotiation Audit Review. A contract modification will be executed to establish the Provisional overhead rate. The Overhead rate, Direct Expenses and Fee are subject to change pending Pre-Negotiation Audit Review. A one time redetermination adjustment in the total amount paid or to be paid on all payment reports shall be made to reflect the established overhead rate and any resulting additional payments, refunds, or credits shall be made promptly. The contract Notice to Proceed date will be the effective date for all redetermination of costs.

- (6) The CONSULTANT is responsible for identifying its costs as allowable and unallowable pursuant to FARS 48 CFR Chapter 1 Part 31.2 and any other mutually agreed upon policies or regulations. Within five months after the CONSULTANT'S fiscal year-end, the CONSULTANT will have properly accounted for its allowable Indirect Costs (Overhead) as set forth herein.
- (a) If the actual Overhead rate is lower than the provisional rate used, the CONSULTANT must determine the difference on the progress billings previously paid by the STATE, and remit to the STATE the amount overpaid by the STATE no later than the end of the sixth month following its fiscal year-end. If the CONSULTANT fails to comply with this condition, a penalty of 20% of the over-paid amount will be assessed. If by the end of the sixth month the CONSULTANT has not remitted either the over-paid amount or the penalty thereon, interest of 1% per month will be charged on the unpaid amount until all amounts owing have been paid. Interest will cease to accrue should the combined amount of penalties and interest accumulate to a maximum of 33% of the amount over-paid by the STATE.
 - (b) If the actual Overhead rate is higher than the provisional rate used, the CONSULTANT may determine the amount of additional Overhead due and request payment of same. The payment request must be properly documented and certified by the Chief Financial Officer of the CONSULTANT. The maximum Overhead allowed, will be the CONSULTANT'S actual percentage for the fiscal year as determined by 3.02 2.b.(6) or (B).
 - (c) If the CONTRACT period exceeds one fiscal year of the CONSULTANT, the provisional rate should be modified to more correctly reflect the actual experience or anticipated experience of the CONSULTANT or any of its Subconsultants, if applicable. Either the STATE or the CONSULTANT may initiate the request to modify the provisional rate to prevent substantial overpayment or underpayment.
- (7) Upon completion of the CONTRACT, a final determination of Indirect Costs (Overhead) may be made based on an audit of financial records pursuant to 3.02 2.e.

c. Other Direct Costs

Direct expenses for travel, subsistence, per diem, or other mutually agreed upon expenses of a non routine nature which can be identified directly to the CONTRACT and related project(s). Out of State travel must have prior approval of the STATE.

Facilities Capital Cost of Money will be allowed when properly supported. The provisional rate for this contract is _____%.

d. Outside Services

Salaries and wages paid to individuals, other than the CONSULTANT'S regular employees, such as payments to other consultants, subconsultants, sub-contractors or vendors for engineering and professional services directly attributable to the CONTRACT.

e. Audit of CONSULTANT'S Business Operations and Financial Records

- (1) All costs billed to the STATE are subject to audit. The CONSULTANT, and by way of subcontract, all subcontractors or Subconsultants, shall allow the designated STATE auditors to perform an audit as deemed appropriate. Such an audit will take into consideration consistent application of Generally Accepted Accounting Principles and Contract Cost Principles and Procedures as set forth in Chapter 1 of the Federal Acquisition Regulations System, 48 CFR Part 31.2 and any other mutually agreed upon policies or regulations.
- (2) The CONSULTANT shall insert in each of its subcontracts the above requirement and also a clause requiring its Subconsultants to include the above requirement in any lower-tier subcontracts.

3. The STATE shall pay the CONSULTANT in installments based upon Progress and Final Payment Reports and Work Hour Reports submitted by the Consultant. A summary of costs billed by category or subcategory, as required by ADOT, is to be included with the invoice. The Payment Reports shall show allowable costs incurred to date under the CONTRACT and the pro-rata portion of the fixed fee earned.

4. Costs are to be identified separately for each project number. Costs for each category must not exceed the amounts budgeted for those specific categories during the contract time frame without prior written approval of the STATE.
5. The CONSULTANT is required to submit a Monthly Progress Report in a format furnished by the STATE showing the status of the work and the degree of completion thereof.

6. The STATE shall not withhold retention on progress payments. However, if satisfactory progress has not been made, the STATE may first retain a maximum of 10% of the current and subsequent billings, or secondly, the STATE may refuse to make full progress payment(s) of such sums which are considered necessary.
7. When all work is delivered, accepted and approved as complete by the STATE, the ADOT Office of Audit and Analysis may prepare a report showing allowable costs incurred. Preparation of this report may require an audit examination of the CONSULTANT'S records. This may also include an examination of subconsultants or subcontractors records.

During performance of progress or final audits, the allowability of direct costs will be contingent upon the CONSULTANT'S ability to demonstrate that these costs were excluded from the overhead cost pool.

8. Final payment shall be made as soon as possible after 60 days from the date of acceptance of the audit findings, if applicable, by the STATE and the CONSULTANT.
9. In the event the STATE requires substantial changes in the scope, character or complexity of the work on the CONTRACT, the total compensation as well the fixed fee portion may be re-evaluated and adjusted to a greater or lesser amount by mutual agreement between the CONSULTANT and the STATE.
10. In the event this CONTRACT is terminated by the STATE as herein provided, the CONSULTANT may be paid all the allowable costs incurred, including mobilization and demobilization expense, plus that portion of the fixed fee earned to date of termination as determined by the STATE. Mobilization and demobilization expenses shall include only reasonable costs of marshalling personnel (and equipment if specifically provided for in the contract) for performing this work and of terminating employment of such personnel. No costs will be allowable in connection with termination of employment if incurred later than fifteen (15) days after the date of termination. Costs will be determined as provided in the Federal Acquisition Regulations and may be verified by an audit.

4.01 CONSULTANT AND SUBCONSULTANT PAYMENT

The CONSULTANT shall submit invoices on a regularly monthly basis in accordance with a timetable agreed to in contract negotiations. Invoices should be sent directly to ADOT Project Manager or Project Monitor.

The CONSULTANT will submit invoices for work performed by their Sub-consultants even though the prime CONSULTANT may not have performed working during the preceding month.

On or before the seventh day after the STATE makes a progress payment to the CONSULTANT, the CONSULTANT shall pay the Sub-consultants for the work performed to the extent of each Sub-consultant's contractual interest in the progress payment.

4.02 CONTRACT MODIFICATIONS

1. Contract modifications, defining and limiting the terms of the contract and compensation, must be approved by the STATE, and shall be submitted in the form and format provided by the STATE. The CONSULTANT will be compensated only with prior written authorization by the STATE. Any administrative/technical costs associated with the preparation of said modifications are solely the responsibility of the CONSULTANT.

- a. Supplemental Agreements

Significant changes in the scope, character, or complexity of the work may be negotiated if it is mutually agreed that such changes are desirable and necessary. Contract changes defining and limiting the work and compensation must be authorized by the STATE. Such supplemental agreement(s) shall be made in writing, and it is expressly understood and agreed that no claim for extra work performed or materials furnished shall be made by the CONSULTANT until authorization to proceed is granted, in writing, by the STATE.

- b. Changes Orders

The STATE may at any time, by written order, and without notice to sureties, if any, make (or direct) changes within the general scope of this CONTRACT in the services to be performed.

4.03 DELAYS AND EXTENSIONS

The CONSULTANT agrees that no charges or claims for damages shall be made against the STATE for any delays or hindrances during the progress of this CONTRACT. Such delays or hindrances, if any, will be covered by an extension of time for such reasonable period as mutually agreed upon between the parties. It is agreed and understood, however, that permission to proceed with the CONTRACT after the established completion date, shall not be construed as a waiver by the STATE of any of its rights herein.

4.04 LATE SUBMITTAL OF INVOICE

Unless waived by the STATE, in writing, all invoices for work performed under this CONTRACT shall be submitted within 60 days from date of acceptance of the completed portion of the work performed.

4.05 PERFORMANCE EVALUATIONS

The CONSULTANT'S performance will be evaluated periodically in accordance with the schedule set forth in Appendix G of this CONTRACT.

4.06 GENERAL COMPLIANCE WITH LAWS

The CONSULTANT shall comply with all Federal and State laws, and local ordinances and regulations.

4.07 LITIGATION

In the event of litigation between the CONSULTANT and the STATE involving this CONTRACT, the laws and decisions of the State of Arizona shall apply and any such litigation shall be commenced and prosecuted in the appropriate court of competent jurisdiction of the Federal or State Court System within the geographical boundaries of the State of Arizona.

4.08 DISPUTE ESCALATION (Administrative Review)

A written dispute escalation process will be utilized to resolve questions of fact during the course of this CONTRACT. The final determination will be made by the STATE.

4.09 ARBITRATION

The parties agree to use arbitration, after exhausting applicable administrative reviews, to resolve disputes arising out of this agreement where the sole relief sought is monetary damages of \$100,000, or less, exclusive of interest and costs.

4.10 TERMINATION, POSTPONEMENT OR ABANDONMENT

1. The right is reserved by the STATE to terminate, indefinitely postpone work, or abandon the CONTRACT. The STATE may terminate this CONTRACT in any one of the following circumstances:
 - a. Failure of the CONSULTANT to perform the services as detailed herein and in any modifications to this CONTRACT.
 - b. Failure of the CONSULTANT to complete this CONTRACT within the time specified herein and in any modifications to this CONTRACT.
 - c. Failure of the CONSULTANT to comply with any of the terms of this CONTRACT.
 - d. When, for any reason, the STATE shall determine that such termination is in its best interest.
2. If the STATE contemplates termination under the provisions of paragraphs 1.a., 1.b., or 1.c. above, the CONSULTANT shall have five (5) days in which to cure such failure. In the event the CONSULTANT does not cure such failure, the STATE may terminate the CONTRACT without further consideration.

3. If, after Notice of Termination of this CONTRACT under the provisions of 1.a., 1.b. or 1.c. of this clause, it is determined that the CONSULTANT was not in violation or default, the Notice of Termination shall be deemed to have been issued under the terms of 1.d. of this clause.
4. Termination shall be effected by delivery to the CONSULTANT of a Notice of Termination specifying whether termination is for default of the CONSULTANT or for the convenience of the STATE, the extent to which performance of the CONTRACT is terminated, and the date upon which such termination becomes effective.
5. In the event of termination, the STATE shall be liable to the CONSULTANT only to the extent and as provided in SECTION 3.02 (CONSULTANTS'S COMPENSATION) of this CONTRACT.
6. In the event this CONTRACT is terminated, the STATE shall have the option of completing the CONTRACT, or entering into an agreement with another party for the completion of this CONTRACT according to the provisions and agreements herein.
7. If the STATE exercises this option, all costs and charges incurred by the STATE, together with the cost of completing the work under CONTRACT, will be deducted from any monies due or which may become due the CONSULTANT.

4.11 CANCELLATION OF STATE CONTRACTS

In accordance with Arizona Revised Statutes 38-511, the STATE may cancel any CONTRACT, without penalty or further obligation, made after the effective date of this section by the STATE or any of its departments or agencies if any person significantly involved in initiating, negotiating, securing, drafting or creating the CONTRACT on behalf of the STATE or any of its departments or agencies is, at any time while the CONTRACT or any extension of the CONTRACT is in effect, an employee of any other party to the CONTRACT in any capacity or a CONSULTANT to any other party of the CONTRACT with respect to the subject matter of the CONTRACT. The cancellation shall be effective when written notice from the STATE is received by all other parties to the CONTRACT unless the notice specifies a later time.

4.12 SUCCESSORS AND ASSIGNS

The CONSULTANT and all successors, executors, administrators and assigns of CONSULTANT'S interest in the work or the compensation herein provided shall be bound to the STATE to the full legal extent to which the CONSULTANT is bound with respect to each of the terms and agreements of this CONTRACT.

4.13 CONTINUING OBLIGATION

The CONSULTANT agrees that if because of death or any other occurrence it becomes impossible for any principal or employee of the CONSULTANT to render the services required under this CONTRACT, neither the CONSULTANT nor the surviving principals shall be relieved of any obligation to render complete performance. However, in such event, the

STATE may terminate this CONTRACT if it considers the death or incapacity of such principal or employee to be a loss of such magnitude as to affect the CONSULTANT'S ability to satisfactorily complete the performance of this CONTRACT.

4.14 INSURANCE

1. Without limiting any liabilities or any other obligations of the CONSULTANT, the CONSULTANT shall provide and maintain the minimum insurance coverage listed below. Coverage will be provided with forms and insurers acceptable to ADOT and maintained at a minimum until obligations under this CONTRACT are satisfied.
 - a. If applicable, Workmen's Compensation insurance to cover obligations imposed by Federal and State statutes having jurisdiction of its employees engaged in the performance of the services, and Employers' Liability insurance with a minimum limit of one hundred thousand dollars (\$100,000). Evidence of qualified self-insured status shall suffice for this section.
 - b. Architects' and Engineer's Professional Liability insurance in the amount of one million dollars (\$1,000,000) each claim, with said coverage to remain in force and effect for a minimum of one year past ADOT's acceptance of the CONTRACT.
 - c. Comprehensive General Liability insurance with a minimum combined single limit of one million dollars (\$1,000,000) each occurrence. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, contractors protective, products and completed operations. Said policy shall contain a severability of interest clause.
 - d. Commercial Automobile Liability coverage with a combined single limit for bodily injury and property damage of not less than one million dollars (\$1,000,000) for all owned, leased, hired and non-owned vehicles. The State of Arizona and the Arizona Department of Transportation must be named as Additional Insureds and Certificate Holder on the policy.
 - e. Valuable Papers insurance in an amount sufficient to assure the restoration of any documents, memoranda, reports, or other similar data relating to the work of the CONSULTANT used in the completion of this CONTRACT.
 - f. The policy required by Sections c. and e. above shall be endorsed to include the STATE and ADOT, its agents and officials and employees as additional insureds and shall stipulate that the insurance afforded CONSULTANT shall be primary insurance and that any insurance carried by ADOT, its agents, officials or employees shall be excess and not contributory insurance to that provided by CONSULTANT.
 - g. A certificate of insurance acceptable to ADOT shall be issued to ADOT prior to commencement of the CONTRACT as evidence that policies providing the required coverages, conditions and limits are in full force and effect. Such certificate shall contain provisions that coverage afforded under the policies will not be cancelled, terminated or materially altered until at least 30 days prior written notice has been given to ADOT.

4.15 INDEMNIFICATION - RESPONSIBILITY FOR CLAIMS AND LIABILITIES

1. For Professional Liability

To the fullest extent permitted by law, the CONSULTANT shall indemnify and hold harmless the State of Arizona, its agents, representatives and employees from and against liability for loss or damage resulting from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant, but only to the extent the loss or damage results from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant.

2. For Other than Professional Liability

To the fullest extent permitted by law, the CONSULTANT shall indemnify and hold harmless the State of Arizona, its agents, representatives and employees from and against liability for loss or damage resulting from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant, but only to the extent the loss or damage results from the negligence of the CONSULTANT, or any subconsultant, or anyone directly or indirectly employed by the CONSULTANT or any subconsultant.

4.16 ANTITRUST VIOLATIONS

The CONSULTANT and the STATE recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact borne by Purchaser or ultimate user: in this case, the STATE. Therefore, CONSULTANT, acting as a Vendor, hereby assigns to the STATE any and all claims for such overcharges.

4.17 LIQUIDATED DAMAGES

(This is an optional provision applied, on an exception basis, primarily to contracts initiated and administered by the Arizona Transportation Research Center - Not applicable to this contract)

4.18 CONSULTANT'S RESPONSIBILITY

The CONSULTANT has total responsibility for the accuracy and correctness of plans and related data prepared under the terms of this CONTRACT, and shall check all such material accordingly for completeness, missing items, correct multipliers and consistency. The plans will be reviewed by ADOT for conformity with ADOT procedures and contract terms. Review by ADOT does not include detailed review or checking of design of major components and related details or the accuracy with which such designs are depicted on the plans.

4.19 ACCURACY OF WORK

Acceptance of the work by the STATE will not relieve the CONSULTANT of the responsibility for subsequent correction of any such errors and the clarification of any ambiguities. The CONSULTANT shall make all necessary revisions or corrections resulting from errors and omissions on the part of the CONSULTANT without additional compensation.

4.20 CONSULTANT'S ENDORSEMENT OF PLANS, ETC.

The CONSULTANT'S seal shall be endorsed and affixed to plans, reports and engineering data furnished under this CONTRACT.

4.21 PROFESSIONAL CONDUCT

The CONSULTANT shall comply with the provisions of A.C.R.R.4-30-301 (which is the official compilation of the Administrative Rules and Regulations for the State of Arizona), entitled Rules of Professional Conduct, Rules of the State Board of Technical Registration for Architects, Assayers, Engineers, Geologists, Landscape Architects and Land Surveyors, which are incorporated herein by reference and hereby made a part of the CONTRACT.

4.22 IMPROPER EXERCISE OF AUTHORITY

It is further understood and agreed that the CONSULTANT shall not in any way exercise any portion of the authority or powers of the State of Arizona, and shall not make a contract or commitment, or in any way represent itself as an agent of the State of Arizona beyond the scope of this CONTRACT unless expressly authorized, in writing, by the STATE.

4.23 CONFLICTS OF INTEREST

1. The CONSULTANT shall not engage the services on this CONTRACT of any present or former STATE employee who was involved as a decision maker in the selection or approval processes or who negotiated and/or approved billings or contract modifications for this CONTRACT.
2. The CONSULTANT agrees that no public or private interest exists and none shall be acquired directly or indirectly which would conflict in any manner with the performance of the CONTRACT.

4.24 ORGANIZATIONAL CONFLICTS OF INTEREST

1. No contract for the construction of a project shall be awarded to the firm that designed the project, or its subsidiaries, affiliates, the parent company or subconsultants, except with the written approval of the STATE.
2. The applicability of the above also applies to a Management and/or General Consultant or any of its subsidiaries, affiliates, the parent company or subconsultants that were involved in any aspect of the design process.

4.24.1 CONSULTANT - CONTRACTOR CONFLICTS OF INTEREST

The CONSULTANT agrees that it shall not perform services on this project for the contractor, sub-contractor or any supplier.

The CONSULTANT shall not negotiate, contract, or make any agreement with the contractor, subcontractor or any supplier with regard to any of the work under this project, or any services, equipment or facilities to be used on this project.

4.25 ORGANIZATION EMPLOYMENT DISCLAIMER

1. The CONTRACT is not intended to constitute, create, give to, or otherwise recognize a joint venture agreement or relationship, partnership, or formal business organization of any kind, and the rights and obligations of the parties shall be only those expressly set forth in the CONTRACT.
2. The parties agree that no persons supplied by the CONSULTANT in the performance of CONSULTANT's obligations under the CONTRACT are considered to be STATE employees, and that no rights of State civil service, retirement or personnel rules accrue to such persons. The CONSULTANT shall have total responsibility for all salaries, wages, bonuses, retirement, withholdings, workmen's compensation, occupational disease compensation, unemployment compensation, other employee benefits and all taxes and premiums appurtenant thereto concerning such persons, and shall save and hold the STATE harmless with respect thereto.

4.26 NONPROCUREMENT DEBARMENT AND SUSPENSION

1. In accordance with 49 CFR 29.505, and by signature on this CONTRACT, the CONSULTANT certifies its' compliance, and the compliance of any subconsultants or subcontractors present or future, by stating that any person associated therewith in the capacity of owner, partner, director, officer, principal investor, project director, manager, auditor, or any position of authority involving Federal Funds:
 - a) is not currently under suspension, debarment, voluntary exclusion, or determination of ineligibility by any Federal Agency;

- b) does not have a proposed debarment pending;
- c) has not been suspended, debarred, voluntarily excluded or determined ineligible by any Federal Agency within the past 3 years; and
- d) has not been indicted, convicted, or had a civil judgment rendered against the firm by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past 3 years as specified by 49 CFR paragraph 29.305(a).

Where the CONSULTANT or subconsultant is unable to certify to the statement in 4.26.1(a) above, the CONSULTANT or subconsultant will be declared ineligible to enter into CONTRACT or participate in the project.

Where the CONSULTANT is unable to certify to any of the statements as listed in 4.26.1 (b), (c) or (d), the CONSULTANT shall submit a written explanation to the STATE. The certification or explanation will be considered in connection with the STATE's determination whether to enter into CONTRACT.

2. The CONSULTANT shall provide immediate written notice to the Department if at any time the CONSULTANT or any subconsultants or subcontractors, present or future, learn that its Debarment and Suspension certification has become erroneous by reason of changed circumstances.

4.27 COVENANT AGAINST CONTINGENT FEES

The CONSULTANT warrants that he has not employed or retained any company or person, other than a bona fide employee working solely for the CONSULTANT, to solicit or secure this CONTRACT, and that he has not paid or agreed to pay any company or person, other than a bona fide employee working solely for the CONSULTANT, any fee, commission, percentage, brokerage fee, gift, or any other consideration, contingent upon or resulting from the award or making of this CONTRACT. For breach or violation of this warranty, the STATE shall have the right to annul this CONTRACT without liability, or in its discretion, to deduct from the contract price or consideration, or otherwise recover the full amount of such fee, commission, percentage, brokerage fee, gift or contingent fee.

4.28 SUBLETTING, ASSIGNMENTS AND TRANSFERS

The CONSULTANT firm was chosen to perform the work on this CONTRACT based upon training and qualifications of its members. Therefore, subletting, assignment or transfer of any work to subconsultants and lower tier subconsultants, unless approved in writing by the STATE prior to performance of work, is expressly prohibited.

4.29 SUBCONSULTANTS

1. The CONSULTANT may retain Subconsultants on an "as required" basis, provided that the Subconsultants selected, and the rates to be paid, are identified on each Subconsultant's DERIVATION OF COST PROPOSAL located in the SCOPE OF WORK section, Appendix E of the CONTRACT, or are

approved by contract modification, or by Administrative Determination Letter, as applicable. All Subconsultants shall be required to follow the terms and conditions of this CONTRACT.

a. Subconsultants' Compensation

Each Subconsultant will be expected to follow covenants set forth in 3.02 2. unless the subcontract is considered a Lump Sum by Task (fixed price) subcontract and not a Costs Plus Fixed Fee subcontract. However, with respect to 3.02 2.b.(5), the Indirect Costs (Overhead) rates for each Subconsultant, when applicable, will be the actual allowable overhead rate or the Negotiated Provisional rate stipulated in each Subconsultant's final DERIVATION OF COST PROPOSAL, as concurred with by the STATE. Each Subconsultant's actual allowable overhead rate or the negotiated provisional Overhead rate is separately determined and may not be the same rate as stipulated for the CONSULTANT.

b. CONSULTANT'S Responsibility Regarding Subconsultant's Costs

The Subconsultant's allowable costs shall be governed by 3.02 2. The CONSULTANT shall monitor the billings received from the Subconsultants and ensure that all costs are documented and supported.

Regarding Indirect Costs (Overhead), the CONSULTANT is responsible for determining that the Subconsultants comply with 3.02 2.b.(6) with respect to the actual allowable or negotiated provisional Overhead rates. The Overhead rates for Subconsultants are "actual allowable" or "negotiated provisional", and must be accounted for annually. A Subconsultant may not bill more than its actual allowable Overhead rate or the negotiated provisional Overhead rate. In the event any Subconsultant violates this subsection, the penalties set forth in 3.02 2.b.(6)(a) will be assessed to the CONSULTANT.

All costs of the Subconsultants are subject to audit unless waived by the STATE. The cost to the STATE for Subconsultants shall be in amounts equal to the actual allowable costs paid to the Subconsultants.

2. The volume of work performed by the Subconsultants shall not exceed 49% of the total contract value unless waived by the STATE.

4.30 SUBCONTRACTS

The CONSULTANT agrees to insert in all subcontracts the clauses hereof entitled "Civil Rights," "Affirmative Action," "Ownership of Documents," "Patents and Copyrights", "Anti Lobbying and Disclosure," "Retention of Records" and "Immigration". The CONSULTANT further agrees to insert in any subcontract exceeding \$100,000 the clause hereof entitled "Environmental Protection."

4.31 KEY PERSONNEL

Any substitution or transfer of personnel specifically identified in CONSULTANT'S proposal as assigned to the work of this CONTRACT shall be subject to prior written approval by the STATE.

4.32 EMPLOYMENT OF PERSONNEL OF PUBLIC AGENCIES

The CONSULTANT shall not engage the service of any person or persons then in the employ of the STATE for work covered by the terms of this CONTRACT without the prior written approval of the STATE.

4.33 ANTI-LOBBYING

1. The CONSULTANT agrees to comply with the provisions of Section 1352 of Title 31, U.S.Code (Public Law 101.121) as codified in Title 48, Federal Acquisition Regulations Subpart 3.8 and Subpart 52.203-11. The legislation prohibits federal funds from being expended by a recipient or any lower tier subrecipients of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence a Federal agency or Congress in connection with the award of any Federal contract, cooperative agreement, including the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan or cooperative agreement. All disclosure statements are to be furnished to the STATE.
2. The CONSULTANT agrees to require all subconsultants and lower tier subconsultants who have agreements exceeding \$100,000 to complete the Certification of Federal Contracts (ECS Form 90-1) and, when appropriate, the Disclosure of Lobbying Activities (ECS Form 90-3) prior to execution of the Prime Consultants Agreement with the STATE. Lower tier certifications are to be maintained by the CONSULTANT.

4.34 OWNERSHIP OF DATA

1. The CONSULTANT agrees to maintain (in sufficient detail as will properly reflect all work done and results achieved in the performance of this CONTRACT) tracings, plans, specifications and maps, basic survey notes and sketches, books, records, reports, research notes, charts, graphs, comments, computations, analyses, recordings, photographs, computer programs and documentation thereof, and other graphic or written data generated in connection with the work called for in the CONTRACT; all such information and documentation to be termed "Data" under this CONTRACT.
2. All Data procured hereunder for the work funded by ADOT shall become the property of ADOT and delivered to ADOT upon request, and shall not be used or released by the CONSULTANT or any other person except with the prior written approval of the STATE; provided however, that CONSULTANT shall not be required to retain any Data not requested by ADOT within five years from the date of final payment to the CONSULTANT hereunder; and provided further that until

such delivery to ADOT the CONSULTANT agrees to permit representatives of ADOT and the Federal Highway Administration to examine and review at reasonable times all Data still in the possession of the CONSULTANT.

3. All services, information, computer program elements, reports and other deliverables which may be patented or copyrighted and created under this CONTRACT are the property of the State of Arizona and shall not be used or released by the CONSULTANT or any other person except with the prior written approval of the STATE.

4.35 ADOT PRODUCTS

ADOT will provide the consultant with the ADOT developed software for the sole purpose of completing this contract, as set forth in the Site License Contract (which includes a detailed list of Software that will be provided to the consultant). The software is provided to the consultant solely for the purpose of completing this contract and for no other purposes. ADOT developed software including: manuals, electronic information, programs, and associated materials, remains the property of ADOT. Any use of this software for purposes other than the fulfillment of this contract is strictly prohibited. The consultant shall not copy the software or provide, distribute or demonstrate the software to other entities. Upon completion of the contract or when otherwise notified by ADOT, the contractor will return all software, backup copies, manuals, electronic information and associated materials to ADOT.

4.36 RETENTION OF RECORDS

1. The CONSULTANT and any subconsultant/subcontractor/vendor shall keep and maintain all books, papers, records, accounting records, files, accounts, reports, costs proposals with backup data and all other material relating to the CONTRACT and related project(s), and shall make all such material available at any reasonable time during the term of work on the CONTRACT and related project(s) and for five (5) years from the date of final payment to the CONSULTANT for auditing, inspection and copying upon the STATE'S request, or at the request of the Federal Highway Administration or any other authorized representative of the Federal Government.
2. The CONSULTANT shall insert in each of its subcontracts the above requirement and also a clause requiring its subconsultants to include the above requirement in any lower-tier subcontracts or purchase orders.

4.37 REVIEW AND INSPECTION

Representatives of the STATE and the Federal Highway Administration are authorized to review and inspect the CONTRACT activities and facilities during normal business hours.

4.38 PROPERTY OR EQUIPMENT

Except as otherwise provided in this CONTRACT, the lease, rental or purchase of property or equipment to perform the work herein described must have the prior written approval of the STATE. The control, utilization and disposition of property or equipment acquired using FEDERAL/STATE funds shall be determined by the STATE in accordance with the property management standards set forth in 49 CFR Part 18 , ADOT Manual - FIN 11.02, and Highways Division Policy and Implementation Memorandum No. 89-04.

4.39 CIVIL RIGHTS

1. The CONSULTANT is required to comply with Executive Order 75-5, "Non-discrimination in Employment by Government Contractors and Subcontractors," which is hereby included in its entirety by reference and considered a part of this CONTRACT.
2. The CONSULTANT is required to comply with Title VI of the Civil Rights Act of 1964, as amended. Accordingly, Title 49, Code of Federal Regulations, Part 21 through Appendix H and Title 23, CFR 710.405 (b) are made applicable by reference and are hereinafter considered a part of this CONTRACT.
3. The CONSULTANT is required to comply with the provisions of Executive Order 11246, entitled "Equal Employment Opportunity," as amended by Executive Order 11375, and as supplemented in Department of Labor Regulations (41-CFR Part 60). Said provisions are made applicable by reference and are hereinafter considered a part of this CONTRACT.
4. The CONSULTANT shall post in conspicuous places available to employees and applicants for employment, the following notice:

It is the policy of this company not to discriminate against any employee, or applicant for employment, because of race, color, religion, creed, national origin, sex, age, handicapped, or disabled veterans and Vietnam era veterans. Such actions shall include, but are not limited to: employment, upgrading, demotion, transfer, recruitment, or recruitment advertising; laying-off or termination; rates of pay or other compensation; and selection for training, and on-the-job training. Also, it is the policy to insure and maintain a working environment free of harassment, intimidation and coercion.

4.40 AFFIRMATIVE ACTION

CONSULTANT shall take the following affirmative action steps with respect to securing supplies, equipment or services under the terms of this CONTRACT:

1. Include qualified firms owned by socially and economically disadvantaged individuals on solicitation lists.

2. Assure that firms owned by socially and economically disadvantaged individuals are solicited whenever they are potential sources.
3. When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by firms owned by socially and economically disadvantaged individuals.
4. Where the requirement permits, establishing delivery schedules which will encourage participation by firms owned by socially and economically disadvantaged individuals.
5. Use the services and assistance of the Small Business Administration, the Office of Minority Business Enterprise of the Department of Commerce and the Community Services Administration as required.

4.41 PARTICIPATION BY DISADVANTAGED BUSINESS ENTERPRISES

The CONSULTANT is required to adhere to the commitment made to participation by ADOT certified Disadvantaged Business Enterprises (DBE) as indicated in the firms Technical Proposal or subsequently agreed to by the STATE during negotiations. The STATE, at its discretion on a case by case basis, may waive the above limitations.

The CONSULTANT must submit the DBE Compliance Report to the Civil Rights Office by the 3rd Friday of each month. The report shall indicate the amount earned by and paid to each DBE working on the project for the preceding month.

4.42 ENVIRONMENTAL PROTECTION

(This clause is applicable if this contract exceeds \$100,000.00. It applies to Federal Aid Contracts Only.)

CONSULTANT is required to comply with all applicable standards, orders or requirements issued under Section 306 of the Clean Air Act (42 U.S.C. 1857 (h)), Section 508 of the Clean Water Act (33 U.S.C. 1368), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR Part 15) which prohibit the use under non-exempt Federal contracts, grants or loans of facilities included on the EPA List of Violating Facilities. Violations shall be reported to the Federal Highway Administration and to the U.S.E.P.A. Assistant Administrator for Enforcement. (EN-329).

4.43 ENERGY CONSERVATION

(This clause is applicable to Federal Aid Contracts Only.)

CONSULTANT is required to comply with mandatory standards and policies, as applicable, relating to energy efficiency which are contained in the State Energy Conservation Plan issued by the State of Arizona in compliance with the Energy Policy Conservation Act (P.L. 94-163).

4.44 PUBLICATION PROVISIONS

The CONSULTANT shall provide annual, quarterly or monthly written progress reports requested by the STATE. Prior to completion of the CONTRACT and related project(s), the CONSULTANT shall prepare a final report summarizing activities, conclusions, and recommendations in a form as prescribed by the STATE, and this report shall be a prerequisite for final payment. Publication rights to all reports are reserved by the STATE. The CONSULTANT shall not release information developed under the CONTRACT prior to publication, except upon written approval of the STATE.

4.45 PUBLICATION PROVISIONS (RESEARCH AND UNIVERSITIES)
(Not applicable to this contract)

4.46 PATENTS AND COPYRIGHTS

All services, information, computer program elements, reports and other deliverables which may be patented or copyrighted and created under this CONTRACT are the property of the State of Arizona and shall not be used or released by the CONSULTANT or any other person except with the prior written approval of the STATE.

4.47 PATENTS AND COPYRIGHTS (RESEARCH AND UNIVERSITIES)
(Not applicable to this contract)

4.48 FEDERAL IMMIGRATION AND NATIONALITY ACT:

1. General: The consultant, including all subconsultant, shall comply with all federal, state and local immigration laws and regulations, as set forth in Arizona Executive Order 2005-30, relating to the immigration status of their employees who perform services on the contract during the duration of the contract. The State shall retain the right to perform random audits of consultant and subconsultant records or to inspect papers of any employee thereof to ensure compliance.
2. Compliance Requirements: By submission of a proposal, the consultant warrants that the consultant and all proposed subconsultants are and shall remain in compliance with all federal, state and local immigration laws and regulations relating to the immigration status of their employees who perform services on the contract. The State may, at its sole discretion, require evidence of compliance from the consultant shall have ten working days from the receipt of the request to supply adequate information.

The Department will accept, as evidence of compliance, a showing by the consultant or subconsultant that it has followed the employment verification provisions of the Federal Immigration and Nationality Act as set forth in Sections 274A and 274B of that Act, including implementation of regulations and agreements between the Department of Homeland Security and the Social Security Administration's verification service.

The Consultant shall include the provisions of Subsection 4.30 in all its subcontracts.

3. **Sanctions for Non-Compliance:** Failure to comply with the immigration laws or to submit proof of compliance constitutes a material breach of contract. The Department will reduce the consultant's compensation by \$10,000 for the initial instance of non-compliance by the consultant or subconsultant. Should the same consultant or subconsultant commit subsequent violations within a two-year time period from the initial violation, the consultant's compensation will be reduced by \$50,000 for each violation. The third instance by the same consultant or subconsultant within a two-year period may result, in addition to the \$50,000 reduction in compensation, in removal of the offending consultant or subconsultant, suspension of work in whole or in part or, in the case of a third violation by the consultant, termination of the contract for default. In addition, the Department may debar a consultant or subconsultant who has committed three violations within a two-year period for up to one year. For purposes of this paragraph, a violation by a subconsultant does not count as a violation by the consultant.

Any delay resulting from a sanction under this subsection is a non-excusable delay. The consultant is not entitled to any compensation or extension of time for any delays or additional costs resulting from a sanction under this subsection.

An example of the sanctions under this subsection is presented in the following table:

| Consultant | Offense by: | | Reduction in Compensation |
|------------|-----------------|-----------------|---------------------------|
| | Subconsultant A | Subconsultant B | |
| First | | | \$10,000 |
| | First | | \$10,000 |
| | Second | | \$50,000 |
| | | First | \$10,000 |
| | Third | | \$50,000 * |

* May, in addition, result in removal of the subconsultant and/or debarment of the subconsultant.

In Witness whereof the parties hereto have executed this agreement as of the day and year first herein written.

FOR THE STATE

ARIZONA DEPARTMENT OF TRANSPORTATION

Date

By: _____

Title

FOR THE CONSULTANT

FIRM NAME

Date

By: _____

Title